

SALVATION ARMY DIVISION CAMP AND RETREAT CENTER

APPENDIX C

**Environmental Noise Analysis, Salvation Army Sierra Divisional
Camp and Retreat Major Use Permit**

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ENVIRONMENTAL NOISE ANALYSIS
SALVATION ARMY
DIVISIONAL CAMP AND RETREAT
MAJOR USE PERMIT
COUNTY OF SAN DIEGO

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SUMMARY

An environmental noise analysis has been performed for the proposed expansion of the Salvation Army Campground and Conference Center Major Use Permit. The findings are as follows:

SUMMARY OF THE PROJECT FINDINGS

<u>SOURCE</u>	<u>IMPACT</u>
Off-site Traffic Noise	The 55 dBA CNEL contour from Mussey Grade Road will extend onto the site but it will not extend to structures or usable outdoor areas.
Change in the Off-site Traffic Noise	Changes fall below the three (3) dBA traffic noise change limit.
On-site Traffic Noise	Levels are below 50 dBA Leq at the property lines and under 60 dBA Leq at avian habitats.
On-site Activity Noise	Possible impact from Presentation Areas at property lines when amplified equipment is in use.
On-site HVAC Noise	The HVAC levels will exceed 45 dBA Leq at one property line location. The HVAC levels will not exceed the 60 dBA Leq limit in the avian habitat areas.
Construction	May exceed the Ordinance levels when equipment is operated at less than 500 feet from the property line. Will exceed 60 dBA Leq limits at avian habitats under 400 feet from the habitat.

The following mitigation measures are intended to correct problems mentioned in the Table above and to clarify the requirements for certain other activities:

1. All residential air conditioning units at the Retreat (HP3) shall have a Sound Rating of 7.0 Bels or less per the American Refrigeration Institute (ARI) test procedure. Units designated HP1 shall not exceed a Sound Rating of 9.3 Bels. Units designated HP2 shall not exceed a Sound Rating of 9.6 Bels. Units designated CU1 and CU2 shall not exceed a Sound Rating of 8.9 Bels.
2. There shall be no outside amplified paging systems.
3. There shall be no off-highway vehicles or courses.
4. Powered model aircraft shall not be permitted unless subject to a County permit.
5. Outside band practice is not allowed.
6. The use of sound amplifying equipment as defined by County Ordinance (Section 36.402) at any outdoor location is prohibited. All indoor activities involving the use of sound amplifying equipment shall comply with the noise limits defined in the County Noise Ordinance

(Section 36.404). Sound amplification equipment shall also include radios, televisions, or any device that mechanically or electronically amplifies an audio or electric signal.

7. The use of acoustic (non-electronic) sound producing equipment used for such activities as a morning reveille or evening taps shall be permitted.
8. All construction activities shall require the use of temporary sound barriers for operations within 125 feet of any project boundary. Such sound barriers shall be a minimum eight feet in height. The insertion loss shall be a minimum of five dBA. Barriers shall be located between the source and the property line at a maximum of 40 feet from the source and in a length equal to the linear length of the construction activity parallel to the property line. For distances under 40 feet the operations cannot exceed 24 minutes in any single hour.
9. Construction activity shall be limited to August 16 through January 31 unless nest monitoring conducted by a qualified biologist indicates the absence of nest activity or completion of the breeding season.
10. When performing maintenance activities within potential noise violation areas (NVAs), maintenance crew shall execute activities exclusively with non-motorized tools in accordance with posted signs and Salvation Army Procedures Manual. The pages of the Salvation Army Procedures Manual that address this measure are attached to this report as Appendix 9.

The project, with the proposed mitigation measures, will comply with all the County's noise regulations and the Ramona Community Plan.

1.0 DESCRIPTION OF THE PROJECT

The project proposes a Specific Plan and modification of an existing Major Use Permit (MUP) to allow expansion of the existing Salvation Army Sierra Del Mar Divisional Camp. The site is located as shown on Exhibit 1. It is in an area of rolling hills. At the present time, it is accessed by Mussey Grade Road only. The site map is shown on Exhibit 2 along with a notation of the location of the major activity areas and the location of the nearest homes to the site. The maximum overnight population of the camp would be 748 with the implementation of the project. Exhibit 3 shows the location of the heating and air conditioning equipment. The major improvements are given in Table 1.

TABLE 1
EXISTING AND PROPOSED FACILITIES

COMPONENT	COUNTS		TOTAL
	EXISTING	ADDED	
Cabin Camp			
Cabins	0	7	12
Arts/Craft Building	0	1	1
Tent Camp			
Tent Cabins (Yurts)	6	4	10
Toilet/Shower	0	1	1
Presentation Area	0	1	1
Nature Study/Educational Camp			
Cabins	0	9	9
Study Building	0	1	1
Presentation Area	0	1	1
Retreat			
Guest Buildings*	1	5	5
Conference Building	0	1	1
Tennis Courts	0	2	2
Swimming Pool	0	1	1
Spa Building	0	1	1
Remote Overnight Camping Area	1	0	1
Staff Housing	6	4	10
Support and Recreation Facilities			
Dining Building	0	1	1
Multipurpose Building	0	1	1
Mini-Theater	0	1	1
Administrative Cluster	1	0	1
Maintenance Structure/Yard**	1	0	1
Sports Play Areas	0	6	6
New Pool	0	1	1
Tennis Courts	0	1	1
Bath/Shower Building	0	1	1
Parking			
Designated Parking Spaces	0	188	188

Notes: * The existing retreat facility will be converted to a chapel under the proposed plan.
 ** The existing maintenance facility would be demolished and a new and expanded maintenance facility would be constructed under the proposed plan.

2.0 APPLICABLE NOISE CRITERIA

The General Plan Noise Element, Policy 4b, of the County of San Diego, states that the exterior noise level for development will be 60 dBA CNEL for noise sensitive land uses unless such a level is unfeasible with current technology. When the 60 dBA CNEL exterior standard cannot be met, the standard will be modified to an interior level of 45 dBA CNEL with a statement of overriding social and economic consideration. The requirement is generally applied to impacts on a site from off-site noise sources -- most notably, roadways.

The site is also within the area defined by the Ramona Community Plan. The Noise Element of this Plan contains the following policies:

1. Permit residential development within the projected CNEL contours of 55 dBA near main roads, airports or other noise sources only when noise impacts can be mitigated.
2. New proposed development within the projected noise contours exceeding CNEL 55 dBA will require buffering or other mitigation devices to return the ambient noise level to 55 dBA.

The County also has a Noise Ordinance intended for application to stationary noise sources. A site would be considered a "stationary" source, even though some activities, such as on-site traffic, are moving sources since the vehicles are traveling on private roads. The Noise Ordinance limits are given in Table 2.

TABLE 2

COUNTY NOISE ORDINANCE LIMITS

NO.	LAND USE ZONE	TIME OF DAY	ONE HOUR AVERAGE SOUND LEVEL
1.	R-S, R-D, R-R, A-70, A-72 S-80, S-87, S-88, S-90 R-V, and R-U Use - Regulations with a density of less than 11 dwelling units per acre	7 A.M. to 10 P.M. 10 P.M. to 7 A.M.	50 45
2.	R-RO, R-C, R-M, C-30, S-84, S-86, R-V and R-U Use regulations with a density of 11 or more dwelling units per acre	7 A.M. to 10 P.M. 10 P.M. to 7 A.M.	55 50
3.	S-94 and other Commercial zones	7 A.M. to 10 P.M. 10 P.M. to 7 A.M.	60 65
4.	M-50, M-52 and M-54	Anytime	70
5.	S-82, and other industrial zones	Anytime	75

Notes: 7:00 A.M. to 10:00 P.M. is called Day
10:00 P.M. to 7:00 A.M. is called Night

The Ordinance states that the limits apply "on or beyond the boundaries of the property on which the sound is produced". This means that compliance must occur at any point along the perimeter of the project, even though there is no development near most of the present boundary. The site is zoned A-70 as are all adjacent areas to the site. Therefore, the applicable limits are 50 dBA Leq in the Day and 45 dBA Leq at Night.

Section 36.410 of the Ordinance has a construction provision that allows the noise levels at the property line of residential uses to be as high as 75 dBA Leq for as long as eight hours in any 24-hour period providing the construction takes place between 7:00 A.M. and 7:00 P.M.

There is no general provision that applies to the use of sound amplifying equipment. One section limits such equipment when used in a County Park and another requires a permit for sound equipment mounted on trucks. Neither provision applies directly to this project. Therefore, use of such equipment will be evaluated using the standards of Table 2.

It is also common in Environmental Noise Studies to identify a minimum threshold of significant change. Most theory holds that 3 dBA is the minimum significant increase for wide band sound sources where sound alone is the only sensory input. Considering the fact that a 3 dBA CNEL increase could be equivalent to a doubling of traffic volumes, it would certainly appear that three is a reasonable figure to employ as the threshold of significance. On balance, a 3 dBA CNEL change appears to be a reasonable measure of significance for this study.

The County has a special provision for wildlife areas. The allowed limit for avian habitats is an average level of 60 dBA Leq. The averaging is for one hour. The limit is usually interpreted to apply to locations where noise exposure is sufficiently frequent to constitute a chronic source of noise.

3.0 EXISTING ENVIRONMENTAL SETTING

The area is sparsely populated with scattered housing. The area's man-made sound levels would be those that are produced by the roadways and aircraft overflights. A short measurement was conducted on the site that can be considered representative of the area's sound levels. The measurement employed a Bruel and Kjaer Model 2218 Integrating Sound Level Meter and a Bruel and Kjaer Model 2317 Portable Level Recorder. The measurement chart is shown on Exhibit 4. The reading, taken at 75 feet from the centerline of Mussey Grade Road, was a ten minute average of 67 dBA Leq with five cars and one heavy truck during the period. However, note that there was a substantial contribution to the average level by aircraft activity. The site is located in the general operational pattern of Miramar Marine Corps Air Station. The traffic count was used to compute the highway noise component alone. The calculations are contained in Appendix 1. The value is 59 dBA Leq.

A 24-hour measurement was taken at the same location. The test data is contained in Appendix 2. The data is plotted on Exhibit 5. Note that the maximum and average levels are fairly constant from 7:00 A.M. to 8:00 P.M., and reach a minimum at 2:00 to 3:00 A.M. This pattern is consistent with sound levels that are produced by road traffic. The 24-hour CNEL value was 57 dBA.

There was an hour around 1:00 P.M. when the maximum of the 24-hour sample equated to the maximum of the short-term measurement (95 dBA). Thus, that event

was likely an aircraft. However, the 24-hour sample suggests that such direct over-flights are not common.

Another way of examining the data is to examine the statistical distribution of the levels. Exhibit 6 shows a typical mid-day hour and a typical early morning hour. During the day, the average level is about 53 dBA Leq. Nearly half the time, the level is below 40 dBA and about twenty-five percent of the time, it is above 50 dBA. At night, the average level is 39 dBA Leq ninety-nine percent of the time.

One of the functions of the measurements is to help develop a traffic noise model based on the CNEL metric. Linscott, Law and Greenspan provided a traffic study, the charts for which are contained in Appendix 3. The existing traffic volumes for the road segments in the traffic study are listed in Table 3.

TABLE 3
EXISTING TRAFFIC VOLUMES

SEGMENT	VOLUME
SR67 Mussey Grade to Highland Valley Rd.	24,300
Mussey Grade Rd. SR67 to Dos Picos Park Rd.	2,270
S/O Dos Picos Park Rd.	850

The measurement provided some guidance as to the way the traffic is distributed by the time of day and this was used to allocate the traffic for CNEL calculation purposes. The breakdown is given in Table 4.

TABLE 4
PERCENT TRAFFIC DISTRIBUTION BY TIME OF DAY

VEHICLE	DAY	EVENING	NIGHT
Auto	75.5%	14.1%	10.4%
Medium Truck	100.0%	0.0%	0.0%
Heavy Truck	100.0%	0.0%	0.0%

Caltrans estimates the truck traffic for State Route 67 amounts to 1.6 percent medium trucks and 0.2 percent heavy trucks. This same breakdown was assumed for Mussey Grade Road.

Using the traffic data, percentages, and distribution ground-rules, the various relevant data are listed in Tables 5, 6 and 7.

TABLE 5

**EXISTING TRAFFIC COUNTS FOR MUSSEY
GRADE SOUTH OF DOS PICOS PARK ROAD**

VEHICLE	DAY	EVENING	NIGHT	VOLUME	PERCENT
Auto	629	118	87	834	98.2
Medium Truck	14	0	0	14	1.6
Heavy Truck	2	0	0	2	0.2

Notes: Traffic Volume = 850
Speed = 50 mph (posted)

TABLE 6

**EXISTING TRAFFIC COUNTS FOR MUSSEY
GRADE SR67 TO DOS PICOS PARK ROAD**

VEHICLE	DAY	EVENING	NIGHT	VOLUME	PERCENT
Auto	1,683	314	232	2,229	98.2
Medium Truck	36	0	0	36	1.6
Heavy Truck	5	0	0	5	0.2

Notes: Traffic Volume = 2,270
Speed = 50 mph (posted)

TABLE 7

EXISTING TRAFFIC COUNTS -- SR67

VEHICLE	DAY	EVENING	NIGHT	VOLUME	PERCENT
Auto	15,643	2,922	1,705	20,270	98.2
Medium Truck	338	0	338	338	1.6
Heavy Truck	42	0	0	42	0.2

Notes: Traffic Volume = 24,300
Speed = 50 mph (posted)

Using the respective data from Tables 4, 5, 6 and 7 calculations contained in Appendix 4 were carried out and the results are summarized in Table 8. It is not possible to precisely account for every location along the roadways because the terrain and ground cover situations are so varied. Therefore, the propagation factor was assumed to be for the "hard" site condition in order to portray the worst-case condition, even though many locations may have lower levels.

TABLE 8

EXISTING ROADWAY NOISE LEVELS

SEGMENT	CNEL	DISTANCE TO CNEL		
	@ 50'	65	60	55
SR67				
Mussey Grade Rd. to Highland Rd.	72.8	300'	945'	2,977'
Mussey Grade Rd.				
SR67 to Dos Picos Park Rd.	62.5	28'	89'	281'
S/O Dos Picos Park Rd.	58.3	11'	34'	106'

Note that the calculated value of 58.3 dBA CNEL for the segment of Mussey Grade Road south of Dos Picos Park Road is very close to the actual measured value of 59 dBA CNEL.

Once the vehicles enter the project site, they are treated as subject to the provisions of the Noise Ordinance and the avian noise limit. The on-site average daily traffic consists of 147 vehicles divided between campers, Retreat Center guests and staff. This count is 53 cars and 10 vans. The peak hour is twelve vehicle movements. The calculations are contained in Appendix 5. The reference value is 45.4 dBA Leq at 50 feet. The value is applied to 14 points on the property line and four residential points off-site that are shown on Exhibit 7. The resulting levels are given in Table 9 for the nearest distance of the internal road to each point.

TABLE 9

EXISTING ON-SITE ROAD
Leq VALUES AT LOCATIONS

LOCATION	NEAREST DISTANCE	LEQ
1	300'	37
2	600'	34
3	1,700'	30
4	3,700'	26
5	3,400'	27
6	1,600'	30
7	1,100'	32
8	1,500'	30
9	1,500'	30
10	500'	35
11	400'	36
12	600'	34
13	1,600'	30
14	1,600'	30
A	500'	35
B	600'	34
C	2,000'	29
D	2,600'	28

The short-term measurement showed aircraft operations, but the 24-hour operation suggested that direct over-flights do not occur often. Exhibit 8 depicts the noise contours that are available for Miramar. They are based on the Navy's operations since a new set for the Marine Corps operations has yet to be published. This Exhibit shows the 60 dBA CNEL contour extending eastward to near State Route 67. Thus, the site should experience aircraft noise frequently, although it appears it is not often directly overhead.

4.0 PROJECT IMPACT

4.1 OFF-SITE TRAFFIC

The Traffic volumes are shown in Table 10.

TABLE 10

PROJECT RELATED TRAFFIC VOLUMES

SEGMENT	EXISTING + PROJECT	EXISTING + CUMULATIVE + PROJECT
SR67 Mussey Grade Rd. to Highland Valley Rd.	26,822	34,522
Mussey Grade Rd. S/O SR67 to Dos Picos	2,545	2,811
S/O Dos Picos Park Rd.	1,125	1,391

The project was projected to generate 275 average daily trips. There was no allocation of trucks and cars in this mix. The assumption is that without the project, the number of trucks and buses rises as the overall traffic increases, but remains proportionately the same as given in Table 4.

The CNEL levels, based on the calculations contained in Appendix 6, are given in Table 11. The distance to the 60 dBA CNEL contour location is given in Tables 12 and 13.

TABLE 11

CNEL VALUES AT 50 FEET

SEGMENT	EXISTING + PROJECT	EXISTING + CUMULATIVE + PROJECT
SR67 Mussey Grade Rd. to Highland Valley Rd.	73.2	74.3
Mussey Grade Rd. SR67 to Dos Picos	63.0	63.5
S/O Dos Picos	59.5	60.4

TABLE 12

CNEL CONTOUR LOCATIONS RELATIVE TO THE
ROADWAY CENTERLINE FOR EXISTING PLUS PROJECT

SEGMENT	DISTANCE TO CNEL		
	65	60	55
SR67			
Mussey Grade Rd.			
To Highland Valley Rd.	323'	1,019'	3,222'
Mussey Grade Rd.			
SR67 to Dos Picos Park Rd.	31'	98'	314'
S/O Dos Picos Park Rd.	14'	45'	141'

TABLE 13

CNEL CONTOUR LOCATIONS RELATIVE TO THE
ROADWAY CENTERLINE FOR EXISTING PLUS
CUMULATIVE PLUS PROJECT

SEGMENT	DISTANCE TO CNEL		
	65	60	55
SR67			
Mussey Grade Rd. to			
Highland Valley Rd.	425'	1,344'	4,247'
Mussey Grade Rd.			
SR67 to Dos Picos Park Rd.	32'	112'	351'
S/O Dos Picos Park Rd.	17'	55'	173'

Notes: Calculations were performed assuming the existing 50 mph speed limit is maintained.

The CNEL contours for the Existing and Existing plus Project plus Cumulative traffic condition from Mussey Grade Road at the site are depicted on Exhibit 9.

Exhibit 9 and Tables 10, 11, 12 and 13 reveal the following facts:

1. At the present time, the 60 dBA CNEL contour at the project site from Mussey Grade Road is less than 50 feet from the centerline of the roadway. This distance is extended to 45 feet with the project and 55 feet with the project and cumulative traffic. These conditions either occur off the site or just barely on the site. The 60 dBA CNEL contour for both the Existing and Existing Plus Project cases does not extend into any usable outdoor area on the project site.
2. At the present time, the 55 dBA CNEL contour at the project site from Mussey Grade Road is less than 106 feet from the centerline of the roadway. This distance is extended to 141 feet for the Existing plus Project and 173 feet for the Existing plus Project plus Cumulative traffic. The contour extends onto the site near the

Retreat Center but does not extend to the actual buildings or the usable outdoor area.

Another way to examine the potential for impact is to examine the changes in the roadway noise levels that will occur. These are given in Table 14.

TABLE 14
CHANGE IN CNEL LEVELS

SEGMENT	EXISTING + PROJECT	EXISTING+ CUMULATIVE + PROJECT
SR67 Mussey Grade Rd. to Highland Valley Rd.	0.0	+ 1.1
Mussey Grade Rd. SR67 to Dos Picos	+ 0.5	+ 1.0
S/O Dos Picos	+ 1.2	+ 2.1

Notes: Change With Project compares the traffic noise for the Existing plus Project and the Existing plus Cumulative plus Project to the existing condition listed on Table 8.

The guideline for significant change in the traffic levels was set at three (3) dBA CNEL. Table 14 reveals that all changes are less than three (3) dBA.

4.2 ON-SITE TRAFFIC

The worst-case traffic scenario for the project would be the addition of 275 project-related vehicle trips on Mussey Grade Road. For purposes of the on-site analysis, it was assumed that all the project related traffic enters the site, moves along the main road and is spread out according to the distribution in Table 4. All traffic is assumed to move to the bus drop-off point as a minimum. The relevant noise condition is the hourly average noise level since the on-site traffic is subject to the Noise Ordinance. The traffic engineer indicates that in the course of a day there will be 40 cars and 92 vans. The peak hour is 21 vehicle movements.

The calculations are contained in Appendix 7. The reference is 47.8 dBA Leq at 50 feet at 35 mph. The values are applied to 14 points on the property line and four off-site residences for the nearest point of the internal road to the property line or residential structure in Table 15. The calculations do not assume any terrain shielding, ground absorption, or structure shielding.

TABLE 15

ON-SITE ROAD Leq VALUES AT THE
PROPERTY LINE AND RESIDENCES

LOCATION	NEAREST DISTANCE	Leq
1	300'	41
2	600'	38
3	1,700'	34
4	3,700'	30
5	3,400'	31
6	1,600'	34
7	1,100'	36
9	1,500'	34
10	500'	39
11	400'	40
12	600'	38
13	1,600	34
14	1,600	34
A	500	38
B	600	38
C	2,000	32
D	2,600	31

4.3 ON-SITE ACTIVITY NOISE

The site contains a number of outdoor activity centers that will produce noise. The list is as follows:

1. Voice sounds from the presentation area sound system and singing. These areas may use amplification equipment on occasion. The equipment will be portable and consist of two stage mounted audience speaker units, a monitor system, mixing console and several microphones. Since the areas have small capacity, the sound levels need not exceed 90 dBA at 50 feet for adequate intelligibility forward of the speakers. Behind the speakers, the level is 20 dBA less, or 70 dBA at 50 feet. To the side is 10 dBA less or 80 dBA at 50 feet. The front and back numbers are needed to address the orientation. The icon for the presentation areas has the wide end representing the forward side of any speaker setup on the site plan. The three Presentation Area detail maps are attached in Appendix 8. The stage location in each case is the narrow portion of the triangular area. Specifically, at Presentation Area 1 the forward projection is West. At Presentation Area 2 the forward projection is South. The same will occur at Presentation Area 3.
2. Human activity noise from the sports facilities and tennis courts.
3. Maintenance yard equipment operation.
4. Voice activity from the Bus Drop-off area.

The controlling issue is compliance with the County's Noise Ordinance as the limits contained therein are more restrictive than the General Plan condition based on the CNEL formula. The locations of the sources and the nearby houses are noted on Exhibits 2 and 3. Since compliance must occur at the property line, a set of 14 locations and four off-site residences has been selected for calculation. These locations are noted on Exhibit 7. Additionally, noise analysis was performed for the actual residential locations near the site.

Most uses are assumed to radiate noise equally in all directions which will not be the case for the Presentation Areas. Therefore, a model assignment is needed for each Presentation Area. This model is shown on Table 16.

TABLE 16

PRESENTATION AREAS DISTANCE AND ORIENTATIONS

LOCATION	PA1	DIST.	PA2	DIST.	PA3	DIST
1.	B	1.9	S	1.1	S	1.2
2.	B	2.9	F	1.1	F	2.5
3.	B	2.8	F	1.8	F	3.5
4.	S	4.6	F	3.7	F	5.5
5.	F	2.6	S	3.0	S	3.8
8.	S	2.2	B	3.5	B	3.8
9.	S	2.7	B	3.8	B	2.4
10.	B	3.6	B	4.4	B	2.8
11.	B	3.6	B	4.4	B	2.8
12.	B	3.6	B	4.4	B	2.8
13.	B	2.1	B	2.3	B	0.7
14.	B	2.2	B	1.9	B	1.0
15.	B	2.1	B	3.2	B	1.8
16.	B	3.4	B	4.1	B	2.9
A.	B	2.1	B	1.4	S	1.1
B.	B	2.2	B	2.4	B	0.8
C.	B	4.9	B	5.6	B	3.9
D.	S	4.7	B	5.9	B	4.5

Notes: Distances are Distance/1000 feet

F = Front Radiation; S = Side Radiation; B = Back Radiation

PA = Presentation Area

The sources and reference noise levels are given in Table 17 on the following page. The noise levels are taken from file data for similar activity centers.

TABLE 17
REFERENCE ACTIVITY AVERAGE
HOURLY NOISE LEVELS

SOURCE	REFERENCE LEVEL AT 50 FT.
Rope Course	60
Existing Pool	64
Bus Drop Off	68
Sports Courts	62
Basketball	58
Presentation Area 1	90/80/70
Presentation Area 2	90/80/70
Presentation Area 3	90/80/70
Dining	65
Multipurpose	67
Maintenance Area	60
New Pool	64
Retreat Pool	64

Notes: The dual numbers for the Presentation Areas apply to the amplified source with the highest number being forward of the speakers, the middle number being to the side of the speakers and the lower numbers behind the speakers.

The distance to the property lines and houses are given in Table 18 and the average hourly sound levels are given in Table 19. The projections are based on a point source model. The values in Table 19 do not account for any terrain shielding, ground absorption, or shielding by structures so they represent the worst-case.

TABLE 18
DISTANCES TO PROPERTY LINE POINTS
AND RESIDENCES FOR ACTIVITY AREAS

SOURCE	LOCATION																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	B	C	D
A.	2.9	1.5	0.3	1.9	3.1	5.2	5.8	6.5	6.5	5.8	4.2	3.7	5.0	6.3	3.2	4.4	7.9	7.7
B.	2.4	1.1	0.7	2.5	2.8	4.3	5.2	5.9	5.9	5.9	3.6	3.1	4.3	5.6	2.7	3.8	7.0	7.0
C.	1.0	0.7	1.6	3.8	3.4	3.7	4.0	4.6	4.6	4.6	2.3	1.8	3.5	4.6	1.2	2.4	5.7	6.2
D.	2.4	1.3	0.7	2.5	2.4	4.4	5.1	5.7	5.7	5.7	3.7	3.2	4.3	5.6	2.8	3.8	7.2	7.0
E.	1.2	0.3	1.4	3.6	3.5	4.2	4.5	5.0	5.0	5.0	2.8	2.0	3.7	5.1	1.4	2.7	5.8	6.0
F.	1.9	2.9	2.8	4.6	2.6	2.2	2.7	3.6	3.6	3.6	2.1	2.2	2.1	3.4	2.1	2.2	4.9	4.7
G.	1.1	1.1	1.8	3.7	3.0	3.5	3.8	4.4	4.4	4.4	2.3	1.9	3.2	4.1	1.4	2.4	5.6	5.9
H.	1.2	2.5	3.5	5.5	3.8	2.6	2.4	2.8	2.8	2.8	0.7	1.0	1.8	2.9	1.1	0.8	3.9	4.5
I.	0.9	1.3	2.2	4.3	3.2	3.2	3.5	4.2	4.2	4.2	2.0	1.6	2.8	4.1	1.2	2.0	5.2	5.6
J.	0.9	1.6	2.5	4.5	3.3	2.9	3.2	3.7	3.7	3.7	1.6	1.3	2.5	3.8	1.0	1.7	4.9	5.3
K.	0.8	2.2	2.6	5.6	4.4	3.4	3.2	3.3	3.3	3.3	0.9	0.2	2.5	3.6	0.5	1.4	4.3	5.2
L.	1.2	0.6	1.5	3.7	3.2	3.8	4.2	4.7	4.7	4.7	2.6	2.0	3.6	4.9	1.5	2.6	5.9	6.2
M.	3.7	5.0	5.8	7.7	5.0	2.0	0.6	0.3	0.4	1.0	2.2	3.1	1.1	0.6	3.6	2.2	1.4	1.5

Notes: Distances listed are Distance/1000 feet.
Source Code #: A = Rope Course, B = Existing Pool, C = Bus Drop Off, D = Sports Courts,
E = Basketball, F = Presentation Area 1, G = Presentation Area 2, H = Presentation Area 3,
I = Dining; J = Multipurpose, K = Maintenance, L = New Pool, M = Retreat Pool
Please see Exhibit 7 for point location identification.

TABLE 19

**AVERAGE NOISE LEVEL AT PROPERTY LINE
POINTS AND RESIDENCES FOR ACTIVITY AREAS**

SOURCE	LOCATION															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	B
A.	25	31	44	28	24	20	19	18	18	19	22	23	20	18	24	21
B.	30	37	41	30	29	25	24	23	23	24	27	28	25	23	30	26
C.	42	45	38	30	31	31	30	29	29	30	35	37	31	29	40	34
D.	28	34	39	28	28	23	22	21	21	22	25	26	23	21	27	24
E.	34	42	33	25	25	24	23	22	22	23	27	30	25	22	33	27
F.	38	32	35	41	56	47	55	33	33	33	37	37	48	43	38	37
G.	53	63	59	53	54	33	32	31	31	31	37	38	34	32	51	36
H.	52	56	53	49	42	37	36	35	35	35	47	44	39	35	53	43
I.	40	37	32	26	29	29	28	27	27	28	33	35	30	27	38	33
J.	42	37	33	28	31	32	30	30	30	31	37	39	33	30	41	36
K.	36	27	26	19	21	23	27	24	24	26	35	48	26	23	40	31
L.	36	42	35	27	28	26	26	25	25	26	30	32	27	26	36	30
M.	26	23	22	19	23	31	41	47	45	37	30	27	36	41	26	30
T	56	64	60	55	58	48	55	48	46	42	50	51	49	46	56	49

Notes: Source Code #: A = Rope Course, B = Existing Pool, C = Bus Drop Off, D = Sports Courts, E = Basketball, F = Presentation Area 1, G = Presentation Area 2, H = Presentation Area 3, I = Dining; J = Multipurpose, K = Maintenance, L = New Pool, M = Retreat Pool
Please see Exhibit 7 for point location identification.
T = Total if all events occur in the same hour which is not likely.

The individual values given in Table 18 do not exceed the day limit of 50 dBA Leq except for the Presentation Areas. Those locations will require some type of mitigation. The Total row in Table 19 indicates that all but one of the property line locations and off site locations would exceed 50 dBA Leq. However, this is mainly due to the contribution of the Presentation Areas. At night most of the activities are dormant and the only real prospect of activity is in the Presentation Areas. Here again, it is the Presentation Areas that contribute the only significant noise.

If the Presentation Areas did not employ amplification, then all levels would be reduced 20 dBA for these sources. In that event, Table 19 would be modified into Table 20 and the totals would be adjusted in some instances. The presentation areas are sized to the number of users in each given component; the presentation area nearest the education component (Presentation Area 1) has a capacity of 198 persons and the presentation area nearest the yurt village (Presentation Area 3) has a capacity of 90 persons. The existing presentation area (Presentation Area 2) has a capacity of approximately 150.

TABLE 20

**AVERAGE NOISE LEVEL AT PROPERTY LINE
POINTS AND RESIDENCES FOR ACTIVITY AREAS
WITH NO AMPLIFICATION IN PRESENTATION AREAS**

SOURCE	LOCATION																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	B	C	D
A.	25	31	44	28	24	20	19	18	18	19	22	23	20	18	24	21	16	16
B.	30	37	41	30	29	25	24	23	23	24	27	28	25	23	30	26	21	21
C.	42	45	38	30	31	31	30	29	29	30	35	37	31	29	40	34	26	26
D.	28	34	39	28	28	23	22	21	21	22	25	26	23	21	27	24	19	19
E.	34	42	33	25	25	24	23	22	22	23	27	30	25	22	33	27	21	20
F.	18	12	15	21	36	27	35	13	13	13	17	17	28	23	18	17	10	21
G.	33	43	39	33	34	13	12	11	11	11	17	18	14	12	31	16	19	9
H.	32	36	33	29	22	17	16	15	15	15	27	24	19	15	33	23	12	11
I.	40	37	32	26	29	29	28	27	27	28	33	35	30	27	38	33	25	34
J.	42	37	33	28	31	32	30	30	30	31	37	39	33	30	41	36	27	25
K.	36	27	26	19	21	23	27	24	24	26	35	48	26	23	40	31	21	20
L.	36	42	35	27	28	26	26	25	25	26	30	32	27	26	36	30	26	22
M.	26	23	22	19	23	31	41	47	45	37	30	27	36	41	26	30	34	33
T	49	50	50	41	42	37	43	47	45	39	43	50	40	41	47	41	37	37

Notes: Source Code #: A = Rope Course, B = Existing Pool, C = Bus Drop Off, D = Sports Courts, E = Basketball, F = Presentation Area 1, G = Presentation Area 2, H = Presentation Area 3, I = Dining; J = Multipurpose, K = Maintenance, L = New Pool, M = Retreat Pool
Please see Exhibit 7 for point location identification.
T = Total if all events occur in the same hour which is not likely.

The result is that the totals are reduced significantly if the amplification is not employed at the Presentation Areas. Therefore, mitigation can be designed to address the unlikely occurrence of all areas operating simultaneously. The problem of non-compliance is mainly the Presentation Areas using amplification equipment.

The levels listed in Table 19 and 20 do not include any terrain shielding, structure shielding, excess atmospheric attenuation, or ground absorption. Thus, it is likely that the actual levels from all sources including the Presentation Areas will be less than shown.

4.4 MECHANICAL EQUIPMENT NOISE

All the living quarters, dining and multipurpose buildings will have Heating and Ventilating (HVAC) equipment. The Mechanical Plans (Sheet 9) of the proposed project plans provide the location, number and mounting for four types of equipment. The following provides the sound power level by HVAC unit as defined in the Mechanical Plans and can also be found on Exhibit 10 of this report: HP1 - 93 dBA; HP2 - 96 dBA; HP3 - 70 dBA; CU1 - 91 dBA; CU2 - 91 dBA

Certain buildings have been grouped into clusters because of the number of buildings. The descriptions are as follows with cluster numbers as shown on Exhibit 3:

- 1 Staff Housing - Four buildings, one with two CU1 Ground mounted units and three with four ground mounted units. All units are on the west side of the buildings.

2. New Cabins - Seven cabins plus Activity Building. All buildings have two units. Two CU1 ground mounted units face north, four CU1 ground mounted units face west, Four CU1 Ground mounted units face east, four CU1 ground mounted units face south and two CU2 units are roof mounted.

3. Education Group - Nine buildings with two CU1 ground mounted HVAC units each. Twelve HVAC units face north, four face west, two face east and none face south.

4. Classroom - One building with three CU1 roof mounted units.

5/6/7 Dining - Two buildings with one roof mounted HP1, two roof mounted HP2, and three CU1 units facing west.

8. Multipurpose/Theater - Two buildings with six roof mounted CU1 units and one ground mounted CU1 unit facing north.

9. Administration - Three buildings with one ground mounted CU1 unit each on north side.

10. Maintenance - One building with one ground mounted CU1 unit on the west side.

11/12/13/14/15/16 Retreats and Multipurpose Building -- Five Retreat Buildings all with wall mounted HP3 units. Each building has nine units on the west side and nine units on the east side. The Multipurpose Building has three roof mounted CU2 units.

The location of the roof mounted units means that they will radiate in all cardinal directions. Ground mounted units will radiate in the three directions not shielded by the structure. For example, Staff Housing has 14 ground mounted units. Being on the north side of the structure the units radiate west, north and east but not south. In order to properly account for the various contributions, it is necessary to identify all the units contributing to noise radiation in each direction. Table 21 lists the units contributing for each cluster for the four cardinal directions.

TABLE 21
CONTRIBUTING HVAC UNITS FOR EACH CLUSTER

CLUSTER	NORTH	EAST	WEST	SOUTH	UNIT TYPE
1. Staff Housing	14	14	14	0	CU1 G
2. Cabins Group	10	10	10	12	CU1 G
3. Education Group	18	14	16	6	CU1 G
4. Classroom	3	3	3	3	CU1 R
5. Dining	1	1	1	1	HP1 R
6. Dining	2	2	2	2	HP2 R
7. Dining	3	0	3	3	CU1 G
8. Multipurpose	6	6	6	6	CU1 R
Theater	1	1	1	0	CU1 G
9. Administration	3	3	3	0	CU1 G
10. Maintenance	1	0	1	1	CU1 G
11. Retreat 1	18	18	18	18	HP3 W
12. Retreat 2	18	18	18	18	HP3 W
13. Retreat 3	18	18	18	18	HP3 W
14. Retreat 4	18	18	18	18	HP3 W
15. Retreat 5	18	18	18	18	HP3 W
16. Retreat 6	3	3	3	3	CU2 R

Notes: G = Ground mounted, R = Roof mounted and W = Wall mounted.

The combination of the unit count and the equipment type results in a reference Sound Power value for each of the cardinal directions from the HVAC unit. For example, 14 CU1 units each rated at a Sound Power Level of 91 dBA produces an effective combined Sound Power Level of 103 dBA. Based on this example, the effective Sound Values for the different combinations are listed in Table 22.

TABLE 22
EFFECTIVE SOUND POWER LEVELS FOR EACH CLUSTER

CLUSTER	NORTH	EAST	WEST	SOUTH	UNIT TYPE
1. Staff Housing	103	103	103	0	CU1 G
2. Cabins Group	101	101	101	102	CU1 G
3. Education Group	104	103	103	103	CU1 G
4. Classroom	96	96	96	96	CU1 R
5. Dining	93	93	93	93	HP1 R
6. Dining	99	99	99	99	HP2 R
7. Dining	96	0	96	96	CU1 G
8. Multipurpose	99	99	99	99	CU1 R
Theater	91	91	91	0	CU1 G
9. Administration	96	96	96	0	CU1 G
10. Maintenance	91	0	91	91	CU1 G
11. Retreat 1	83	83	83	83	HP3 W
12. Retreat 2	83	83	83	83	HP3 W
13. Retreat 3	83	83	83	83	HP3 W
14. Retreat 4	83	83	83	83	HP3 W
15. Retreat 5	83	83	83	83	HP3 W
16. Retreat 6	96	96	96	96	CU2

Notes: G = Ground mounted, R = Roof mounted and W = Wall mounted.

The distances to the eighteen points identified on Exhibit 7 are listed in Table 23.

TABLE 23

DISTANCE FROM STRUCTURES TO THE PROPERTY
LINE POINTS AND RESIDENCES FOR HVAC EQUIPMENT

BLDG	LOCATION																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	B	C	D
1	2.7	1.3	0.3	1.9	4.6	5.2	5.5	5.9	5.9	5.5	3.7	3.4	4.8	6.2	2.9	4.2	7.1	7.1
2.	1.9	1.0	1.1	3.1	2.6	3.8	4.5	5.1	5.1	4.5	3.1	2.7	3.7	5.0	2.1	3.2	6.1	6.0
3.	1.4	1.7	2.6	4.7	2.8	2.6	3.1	3.7	3.7	3.2	1.9	1.9	2.4	3.7	1.6	2.1	4.6	4.4
4.	1.8	2.3	2.8	4.6	2.9	2.2	2.9	3.6	3.6	3.2	2.0	2.2	2.1	3.4	2.0	2.2	4.6	4.4
5.	0.9	1.3	2.2	4.2	3.1	3.2	3.6	4.0	4.0	3.5	2.0	1.6	2.8	4.1	1.2	1.9	5.0	5.1
6.	0.9	1.3	2.2	4.2	3.1	3.2	3.6	4.0	4.0	3.5	2.0	1.6	2.8	4.1	1.2	1.9	5.0	5.1
7.	0.9	1.3	2.2	4.2	3.1	3.2	3.6	4.0	4.0	3.5	2.0	1.6	2.8	4.1	1.2	1.9	5.0	5.1
8.	0.9	1.6	2.5	4.6	3.3	2.9	3.2	3.7	3.7	3.2	1.6	1.3	2.8	4.1	1.2	1.9	5.0	5.1
9.	1.1	0.7	1.6	3.7	3.2	3.7	4.0	4.7	2.0	4.0	2.5	2.0	3.5	4.8	1.4	2.6	4.8	4.8
10.	0.7	2.2	3.3	1.9	4.4	3.3	3.2	3.3	3.3	2.5	0.9	0.2	2.5	3.6	0.6	0.8	4.0	4.5
11.	3.2	4.4	5.4	7.3	5.0	2.0	0.8	0.8	0.8	0.7	1.6	2.6	0.9	1.1	3.0	1.7	1.8	2.4
12.	3.4	4.7	5.6	7.5	5.0	2.0	0.6	0.6	0.6	0.8	1.9	2.9	1.0	0.9	3.4	1.9	1.6	1.8
13.	3.7	5.0	5.8	7.7	5.0	2.0	0.6	0.3	0.4	1.0	2.2	3.1	1.1	0.6	3.6	2.2	1.4	1.5
14.	3.7	5.2	5.8	7.7	5.6	2.4	0.9	0.4	0.2	0.8	2.2	3.2	1.4	0.9	3.7	2.2	1.1	1.6
15.	3.6	5.0	5.6	7.5	5.6	2.4	1.0	0.6	0.4	0.6	2.1	3.0	1.3	1.0	3.4	2.0	1.2	1.8
16.	3.4	4.8	5.5	7.4	5.7	2.4	1.0	0.7	0.6	0.5	1.8	2.8	1.2	1.1	3.2	1.8	1.4	2.0

Notes: Distances listed are Distance/1000 feet.

Source Code #: 1 = Staff Housing; 2 = New Cabins; 3 = Education Group; 4 = Classroom;

5 = Dining HP1; 6 = Dining HP2; 7 = Dining CU1; 8 = Multipurpose/Theater;

9 = Administration; 10 = Maintenance; 11 = Retreat 1; 12 = Retreat 2; 13 = Retreat 3;

14 = Retreat 4; 15 = Retreat 5; 16 = Retreat 6.

Please see Exhibit 7 for point location identification.

The noise levels at the 18 points depend on the extent of exposure from the HVAC equipment at a particular structure. For example, the HVAC units at the Staff Housing cluster are all on the north side of the structures. Thus, Locations 1, 2, 3, 7, 8, 10, 11 and 12 will be shielded from exposure to these units by the building structure. Some amount of self-shielding by the structures is present at all the locations. There may also be other shielding from structures, terrain and vegetation, but these are not being considered at this time. Table 24 lists the average sound level at each of the twelve locations with the adjustments made for the direct exposure. The assumption is that all units will operate at the same time within the same hour, so there will be a total exposure from all HVAC systems at each location.

TABLE 24
AVERAGE NOISE LEVEL FROM THE HVAC UNITS AT
THE PROPERTY LINE POINTS AND RESIDENCES

BLDG	LOCATION																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	B	C	D
1	*	*	*	37	30	29	*	*	*	*	*	*	*	*	*	*	*	*
2	36	39	38	29	31	27	26	25	25	26	29	30	28	25	33	29	23	23
3.	36	44	41	36	27	34	32	31	31	32	34	33	34	31	35	35	29	29
4.	31	29	27	23	27	29	27	25	25	26	30	29	30	25	30	29	23	23
5.	34	31	26	21	23	23	22	21	21	22	27	29	24	21	31	27	19	19
6.	40	37	32	27	29	29	28	27	27	28	33	35	30	27	37	33	25	25
7.	37	34	29	24	26	26	*	*	*	*	*	32	*	*	34	*	*	*
8.	40	36	32	27	30	31	30	29	29	30	36	38	31	28	38	34	26	26
9.	35	*	*	*	26	25	24	23	30	24	28	30	25	22	33	28	22	22
10.	34	34	31	25	18	21	21	21	23	23	32	*	23	20	35	33	19	18
11.	13	10	8	6	9	14	22	25	25	23	19	15	21	19	13	18	18	15
12.	12	10	8	5	9	14	24	27	27	22	17	14	20	21	12	17	19	18
13.	12	9	8	5	9	14	24	33	31	20	16	13	19	24	12	16	20	19
14.	12	9	8	5	8	12	21	31	37	22	16	13	17	21	12	16	22	19
15.	12	9	8	5	8	12	20	27	31	24	17	13	18	20	12	17	21	18
16.	25	22	21	19	21	28	36	39	40	42	31	27	34	35	26	31	33	30
TOTAL	46	47	44	41	38	40	40	42	44	44	42	43	40	39	45	43	37	36

Notes: * = situations where the location is completely shielded from the HVAC for the structure listed.
Source Code #: 1 = Staff Housing; 2 = New Cabins; 3 = Education Group; 4 = Classroom;
5 = Dining HP1; 6 = Dining HP2; 7 = Dining CU1; 8 = Multipurpose/Theater; 9 = Administration;
10 = Maintenance; 11 = Retreat 1; 12 = Retreat 2; 13 = Retreat 3; 14 = Retreat 4; 15 = Retreat 5; 16 = Retreat 6.
Total of all units based on the assumption that all units are operated simultaneously.

The conditions exceed the nighttime limit of 45 dBA Leq only at Location and 12. The daytime limit is not exceeded at any location. Thus, there will be an impact based on the current mechanical plan specifications at one location along the property line. This situation is created mainly by the specification for HVAC Unit CU1 and can be corrected by reducing the Sound Rating of these units two dBA and that of HP2 by one dBA.

The levels given in Table 24 do not include any terrain shielding, structure shielding, excess atmospheric attenuation, or ground absorption. Thus, it is possible that the actual levels from the HVAC units will be less than shown.

In addition to the HVAC equipment, there be pool pumps and heaters at the pool areas, exhaust fans for the kitchen area of the Dining facility, and a compressor at the dining facility. The pool equipment will be housed inside the pool building. The exhaust fans would be rated at 12 Sones, or less, per the Air Control and Movement Association's procedures and would result in 27 dBA to the closest noise receptor, receptor number one. The compressor will be housed inside the Dining facility. The basic noise rating, and noise level at the nearest point of the 14 locations on the property line are listed in Table 25.

TABLE 25

MISCELLANEOUS MECHANICAL EQUIPMENT

EQUIPMENT	REF. LEVEL	P/L LEVEL AT LOCATION
Old Pool	43	Negligible at 800' at #3
New Pool	43	Negligible at 700' at #2
Retreat Pool	43	Negligible at 300' at #8
Dining Fans	87	27 dBA at 1000' at #1
Compressor	60	Negligible at 1000' at #1

Notes: Reference Level is the Sound Power Level.

Pool pumps rated at 83 dBA inside an enclosure with a Sound Transmission Class Rating of 40. All permanent pumps shall be within an enclosure. Enclosures shall be light tight. Doors, hatches and other openings shall have full perimeter weather-stripping. The enclosure shall be constructed so that the sides and top were no closer than two feet to any portion of the pump. The enclosure shall have a minimum Sound Transmission Class rating of 40. This enclosure will require a ventilation fan whose rating will not exceed 15 Sones. Openings will be provide for intake and exhaust where each does not exceed ten percent of the total surface area of the enclosure.

Dining Room assumed to have five fans rated at 12 Sones each.

Compressor rated a 100 dBA inside an enclosure with a Sound Transmission Class Rating of 50.

The miscellaneous equipment will not contribute significantly to the overall noise levels.

4.5 MAINTENANCE EQUIPMENT NOISE

The maintenance equipment will include various types of equipment used to maintain the roads, clear brush, and perform landscaping. In theory, this equipment could be used any place on the site, although it is more frequently used in the developed areas of the site.

Noise issues from maintenance uses are handled by addressing the hours of use and the likelihood of a full hour of use in any one location. Maintenance equipment described in Table 26 are typical machinery used for maintaining landscaped areas such as those in the proposed project. All maintenance operations would only be necessary a few times a month or less and would occur during daytime hours (7 a.m. to 10 p.m.). Violations would occur if the noise levels exceed the 50 dBA CNEL, within the distances given in Table 26, for more than an hour, as established in the San Diego County Noise Ordinance. Exhibits 11 and 12 show the areas that occur within these potential violation distances.

TABLE 26

**SETBACK FROM PROPERTY LINE REQUIRED FOR
UNMITIGATED MAINTENANCE NOISE TO MEET
COUNTY STANDARD OF LESS THAN 50 dBA Leq**

SOURCE	DISTANCE
Tractor	80'
Lawnmower	89'
Bush Trim	112'
Leaf Blower	89'
Line Trim	80'
Refuse	89'
Street Sweeper	249'

Notes: The calculations do not account for terrain shielding, or excess atmospheric attenuation.
Time calculated at two minutes in any hour.

It should be noted that, according to Camp Maintenance Staff, leaf blowing and line trimming would only be performed on paths and walkways leading to cabins or other buildings. None of these areas are located within potential violation zones.

An approximately 0.6 acre portion of the fire protection area, directly north of the proposed Retreat Center and tennis courts, lies adjacent to the property line and within the potential noise violation areas for the bush trimmer and lawnmower (Exhibit 11). Approximately 35 feet of trees and bushes would be located within the 112-foot potential noise violation area for the bush trimmer. Assuming the trimmer can be used at five seconds a foot, the area could be trimmed in approximately three minutes. The average hourly noise level associated with three minutes of the bush trimmer within the violation zone would be 68 dBA. Assuming the lawnmower is 4-feet wide and travels at a speed of five miles per hour (mph), approximately 15 minutes would be needed to mow the 0.6 acre potential violation area. The average hourly noise level associated with 15 minutes of the lawnmower within the violation zone would be 64 dBA. Therefore, use of either the bush trimmer and lawnmower would result in potentially significant noise impacts.

A 0.4 acre area located to the south of the Maintenance Area (Exhibit 12) is in close proximity to the property line and thus could produce a noise violation through the use of maintenance activities. The majority of this area would consist of Poplar trees that act as a buffer from the main road and maintains a rustic feel to the camp character. However, because these trees would serve as a visual buffer and would not be in a highly maintained area, they will not be trimmed. Therefore, no impact would occur.

A street sweeper is proposed to perform maintenance to all paved roads and parking lots of the project site. As shown in Table 26, a noise violation could occur from a street sweeper at a distance of 249 feet from the property line. Although the sweeper is highly mobile and would not create consistent noise in any one location, it should be noted that 0.9 miles of the streets and 1.1 acres of parking lots are located within the potential noise violation area for the sweeper. Assuming the sweeper travels at a speed of 10 mph, then it could travel the 0.9 miles of street in the potential violation zone in a total of 5.4 minutes. It would sweep both

sides of the streets and, therefore, would take a total of 10.8 minutes to complete sweeping in the violation zones. However, at 10 mph, the sweeper would pass any noise receptor in approximately one second. The average hourly noise level associated with one second of the street sweeper within the violation zone would be 33 dBA. Therefore, noise impacts associated with the street sweeper along the segments of paved roads within the potential noise violation areas would be less than significant.

The proposed overflow parking lot to the south of the existing landfill would contain 0.8 acres within the street sweeper's 249-foot potential violation zone. Assuming a sweeping width of 7.5 foot at a speed of 10 mph, it would take approximately seven minutes to cover an acre of pavement. Therefore, approximately 5.5 minutes would be spent sweeping the 0.8-acre area of the parking lot within the potential violation zone. The average hourly noise level associated with 5.5 minutes of the street sweeper within the violation zone would be 59 dBA. In addition, irrigated slopes surround the parking lot. This vegetation consists of native, slow-growing species, generally not requiring maintenance. However, during the occasional trimming it can be assumed that the approximate 130 feet of vegetation within the bush trimmer potential violation area could be maintained in approximately 10 minutes at 5 seconds a foot. The average hourly noise level associated with 10 minutes of the bush trimmer within the violation zone would be 73 dBA. Therefore, operation of the street sweeper or tree/bush trimmer in this area would result in a potentially significant noise impact.

Average noise levels in the potential violation zones to the north of the Retreat Center associated with the bush trimmer and the lawnmower, or use of the street sweeper or trimmer in the overflow parking area, would create a significant impact. When performing maintenance activities within potential noise violation areas (NVAs), maintenance crew shall refrain from street sweeping execute activities exclusively with non-motorized tools in accordance with posted signs and Salvation Army Procedures Manual. The pages of the Salvation Army Procedures Manual that address this measure are attached to this report as Appendix 9.

Point source noise impacts would be lowered to below a level of significance if the mitigation measures listed above would be implemented. A substantial increase in ambient noise would not occur from the use of such maintenance equipment.

Trash is collected weekly and dumpsters will be at most buildings, with some cabin clusters sharing a collective bin. Deliveries will occur sporadically, depending on camp capacity, which varies considerably throughout the year. On average, it is expected that there would be about one delivery a day. The majority of collection and delivery sites more than 100 feet away from the property and all collection and deliveries will occur during the County Ordinance (Section 36.407) allowed hours of 6 a.m. to 10 p.m. Therefore, sound from these collections and deliveries would be below the daytime limit of 50 dBA at the adjacent property boundaries. In the few areas where collection or delivery vehicles might be within 100 feet of the property boundary, the time that vehicles would operate near these boundaries would be minimal, i.e. a few minutes or less, and therefore would not result in sound levels that exceed the one hour average sound limit of 50 dBA. Maintenance and refuse equipment uses will have no significant impact.

4.6 CONSTRUCTION NOISE

A variety of construction equipment will be used, including scrapers, graders, rollers, jackhammers, and so on. A typical listing of the maximum noise levels is shown on Exhibit 13. Average noise levels would be less. How much less depends on the operating time history of the equipment. The County's Noise Ordinance, Section 36.410, provides certain specific provisions regulating construction among which is a prohibition that the noise level shall not exceed 75 dBA Leq for more than eight hours at the boundary of a any residential property. In this project, that location would be at the property line. An example of equipment very likely to be employed in the construction of the new areas of the site is a compactor/grader. A compactor/grader is shown on Exhibit 13 to have a sound level as high as 95 dBA at 50 feet. The level at any point in time would vary as the equipment moves back and forth across the grading area. For example, the compactor grader that has a maximum level of 95 dBA at 50 feet would very likely produce an hourly average level of 79 dBA Leq. Given this figure the conditions that would exist from the various development areas is shown in Table 27.

TABLE 27

**AVERAGE HOURLY NOISE LEVELS FROM TEMPORARY
CONSTRUCTION ACTIVITIES TO THE NEAREST PROPERTY LINE
AND THE CALCULATED HEIGHT FOR SOUND BARRIERS**

CLUSTER AREA	DISTANCE	LEQ	REQUIRED INSERTION LOSS	BARRIER HEIGHT
Staff Housing	165'	69	0	0
Cabin Area	325'	63	0	0
Administration	212'	66	0	0
Yurt Camping	402'	61	0	0
Maintenance Building	150'	69	0	0
Overflow Parking	40'	80	5	8'
Retreat Center	40'	80	5	8'
Leach Fields	40'	80	5	8'

Notes: The Construction Activity is defined as the outer boundary from each cluster to the nearest property line. The distances shown are the expected distances to the property line. However, when the distance is under 125 feet, and eight foot high sound barrier must be constructed that allows the operation to approach to 40 feet without any operational restriction. If the distance is less than 40 feet, then, grading in any one hour cannot exceed 24 minutes at distances less than 40 feet in the hour.

Staff Housing - A Level Berm located to the east of the housing buildings (Grading Plans, Sheet #7)

Cabin Area - The Activities Building located to the east of the cabins (Grading Plans - Sheet #12)

Administration - Tennis Courts located to the southeast of the Administration Buildings (Grading Plans - Sheet #22)

Yurt Camping Area - The easternmost ten (Grading Plans - Sheet #27)

Maintenance Building - The eastern portion of the Maintenance Building (Grading Plans Sheet #27)

Overflow Parking - The access road associated with Overflow Parking Lot (Grading Plans - Sheet #27)

Retreat Center - The northernmost guest house (Grading Plans - Sheet #32)

Leach Fields Area - The proposed fields are dispersed throughout the property. In several areas a field will be located adjacent to the property line. (Site Plan - Sheet #3)

In locations where a sound barrier is required the barrier shall be located no farther than 40 feet from the grading activity between the grading activity and the property line and of a length that matches the linear extent of the grading parallel to the property line.

4.7 WILDLIFE IMPACTS

Exhibit 14 shows the general areas of Diegan Coastal Sage Scrub, Coastal Sage-Chaparral Scrub, and Southern Coast Live Oak Riparian Woodland areas. Scrub habitats are sensitive because they have the potential to provide habitat to the endangered California Gnatcatcher. However, protocol surveys for this species revealed its absence from this site.

Some portions of the sensitive zones are located near the proposed staff housing, the Multipurpose Building, and the Dining Area. The avian areas would be exposed to air conditioner noise and maintenance equipment noise. Some avian areas are near the internal road, so they would be exposed to the noise levels from the road.

The project's intent is to clear away brush at least 100 feet from any structure. Thus, the HVAC noise would be computed based on a minimum 100 foot distance. The brush would be kept at least 50 feet from the roadway.

The habitat area appears to come closest to the staff housing area. In many locations within the property, the HVAC distances exceed 100 feet. At each staff housing building, there are two ground mounted HVAC units on the north side rated at a Sound Power Level of 91 dBA each. At 100 feet, these combined units would produce an average level of 54 dBA Leq. This will be below the limits of 60 dBA Leq. The same conclusion would apply to most of the housing units and other structures. Because all new buildings have a 100 foot fire clearance zone surrounding them no sensitive habitat will be located within 100 feet of any Retreat building.

Vehicles operate on the roadway everyday. The daily average level at 50 feet is listed in the calculations contained in Appendix 7 as 47.8 dBA Leq in the highest hour. This would be less than the allowed level of 60 dBA Leq.

Obviously, if there is to be a clearance area for brush 100 feet around any structure, then maintenance equipment would have to be used within the clearance zone. This could bring the operation at times as close as the edge of the avian habitat. The clearance operation would not be a chronic condition, but when required, could take several hours. It is estimated that brush trimmers could produce from 80 to 90 dBA Leq at the edge of the clearance zone. Almost any operation with motorized equipment is going to exceed 60 dBA Leq in the habitat on a short-term basis. It does not appear that the frequency of use at any one location would be considered to be chronic. The construction operations may also exceed the 60 dBA Leq limit for the avian habitats. For example, the compactor/grader that has a maximum level of 95 dBA at 50 feet would very likely produce an hourly average of 79 dBA Leq at 50 feet. The equipment would need to be more than 400 feet from an avian habitat to avoid exceeding 60 dBA Leq. Since grading make take several weeks, it might be classed as a chronic noise source.

4.8 PROJECT CONSISTENCY

The project will not be classified as a residential development under the Community Plan nor would it be located within the 55 dBA contour near any main road, airport or other source. Therefore, it is in compliance with the directive of the Ramona Community Plan Noise Element to permit residential development within projected CNEL contours of 55 dBA near main roads, airports or other sources only when noise impacts can be mitigated. The project does not propose any sensitive receptors within the projected noise contours exceeding 55 dBA and, therefore, the project is in compliance with the Ramona Community Plan Noise Element item directive that new development proposed within the projected noise contours exceeding 55 dBA will require buffering or other mitigation devices to return the ambient noise level to 55 dBA and does not require any mitigation or buffering pursuant to the Element.

4.9 SUMMARY OF FINDINGS

The potential impacts based on the current plan, traffic projections and mechanical equipment specifications are summarized in Table 28.

TABLE 28

SUMMARY OF PROJECT FINDINGS

SOURCE	IMPACT
Off-site Traffic Noise	The 55 dBA CNEL contour from Mussey Grade Road will extend onto the site but it will not extend to structures or usable outdoor areas.
Change in the Off-site Traffic Noise	Changes fall below the three (3) dBA Traffic noise change limit.
On-site Traffic Noise	Levels are below 50 dBA Leq at the property lines and under 60 dBA Leq at avian habitats.
On-site Activity Noise	Possible impact from Presentation Areas at property lines when amplified equipment is in use.
On-site HVAC Noise	The HVAC levels will exceed 45 dBA. Leq at one property line location. The HVAC levels will not exceed the 60 dBA Leq limit in the avian habitat areas.
Construction	May exceed the Noise Ordinance when equipment is operated closer than 500 feet from the property lines. Will exceed 60 dBA Leq limits at avian habitats under 400 feet from the habitat.

5.0 REDUCED ALTERNATIVE I

The reduced alternative is shown on Exhibit 15. It retains most of the elements of the proposed project. The major difference is that the Retreat Center is moved to the large parking area with one 16 unit building eliminated and the Yurt camping component eliminated. Virtually all aspects of the project

discussion are retained as listed in the Tables except for the noise produced by the HVAC equipment at some locations. As a result of removing the Yurt Camping Area, Presentation Area 3 is eliminated. The distances to the various locations are listed in Table 29 and the levels are listed in Table 30.

TABLE 29

**DISTANCES TO PROPERTY LINE POINTS
AND RESIDENCES FOR ACTIVITY AREAS**

SOURCE	LOCATION																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	B	C	D
A.	2.9	1.5	0.3	1.9	3.1	5.2	5.8	6.5	6.5	5.8	4.2	3.7	5.0	6.3	3.2	4.4	7.9	7.7
B.	2.4	1.1	0.7	2.5	2.8	4.3	5.2	5.9	5.9	5.9	3.6	3.1	4.3	5.6	2.7	3.8	7.0	7.0
C.	1.0	0.7	1.6	3.8	3.4	3.7	4.0	4.6	4.6	4.6	2.3	1.8	3.5	4.6	1.2	2.4	5.7	6.2
D.	2.4	1.3	0.7	2.5	2.4	4.4	5.1	5.7	5.7	5.7	3.7	3.2	4.3	5.6	2.8	3.8	7.2	7.0
E.	1.2	0.3	1.4	3.6	3.5	4.2	4.5	5.0	5.0	5.0	2.8	2.0	3.7	5.1	1.4	2.7	5.8	6.0
F.	1.9	2.9	2.8	4.6	2.6	2.2	2.7	3.6	3.6	3.6	2.1	2.2	2.1	3.4	2.1	2.2	4.9	4.7
G.	1.1	1.1	1.8	3.7	3.0	3.5	3.8	4.4	4.4	4.4	2.3	1.9	3.2	4.1	1.4	2.4	5.6	5.9
H.	1.2	2.5	3.5	5.5	3.8	2.6	2.4	2.8	2.8	2.8	0.7	1.0	1.8	2.9	1.1	0.8	3.9	4.5
I.	0.9	1.3	2.2	4.3	3.2	3.2	3.5	4.2	4.2	4.2	2.0	1.6	2.8	4.1	1.2	2.0	5.2	5.6
J.	0.9	1.6	2.5	4.5	3.3	2.9	3.2	3.7	3.7	3.7	1.6	1.3	2.5	3.8	1.0	1.7	4.9	5.3
K.	0.8	2.2	2.6	5.6	4.4	3.4	3.2	3.3	3.3	3.3	0.9	0.2	2.5	3.6	0.5	1.4	4.3	5.2
L	1.2	0.6	1.5	3.7	3.2	3.8	4.2	4.7	4.7	4.7	2.6	2.0	3.6	4.9	1.5	2.6	5.9	6.2
M.	1.9	3.2	4.2	6.3	4.5	2.6	1.9	2.2	2.2	1.4	0.3	1.2	1.5	2.4	1.7	0.4	2.6	3.1

Notes: Distances listed are Distance/1000 feet.

Source Code #: A = Rope Course, B = Existing Pool, C = Bus Drop Off, D = Sports Courts, E = Basketball, F = Presentation Area 1, G = Presentation Area 2, H = Presentation Area 3, I = Dining, J = Multipurpose, K = Maintenance, L = New Pool, M = Retreat Pool.

TABLE 30

**ALTERNATIVE I AVERAGE NOISE LEVEL AT PROPERTY LINE (1)
POINTS AND RESIDENCES FOR ACTIVITY AREAS**

SOURCE	LOCATION																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	B	C	D
A.	25	31	44	28	24	20	19	18	18	19	22	23	20	18	24	21	16	16
B.	30	37	41	30	29	25	24	23	23	24	27	28	25	23	30	26	21	21
C.	42	45	38	30	31	31	30	29	29	30	35	37	31	29	40	34	26	26
D.	28	34	39	28	28	23	22	21	21	22	25	26	23	21	27	24	19	19
E.	34	42	33	25	25	24	23	22	22	23	27	30	25	22	33	27	21	20
F.	38	32	35	41	56	47	55	33	33	33	37	37	48	43	38	37	30	41
G.	53	63	59	53	54	33	32	31	31	31	37	38	34	32	51	36	29	29
I.	40	37	32	26	29	29	28	27	27	28	33	35	30	27	38	33	25	34
J.	42	37	33	28	31	32	30	30	30	31	37	39	33	30	41	36	27	25
K.	36	27	26	19	21	23	27	24	24	26	35	48	26	23	40	31	21	20
L.	36	42	35	27	28	26	26	25	25	26	30	32	27	26	36	30	26	22
M.	31	27	25	21	24	29	31	30	31	34	44	35	33	29	32	45	29	27
TOTAL	54	63	59	53	57	48	55	40	40	41	50	51	49	45	53	50	38	43

Notes: Source Code #: A = Rope Course, B = Existing Pool, C = Bus Drop Off, D = Sports Courts, E = Basketball, F = Presentation Area 1, G = Presentation Area 2, I = Dining, J = Multipurpose, K = Maintenance, L = New Pool, M = Retreat Pool

The primary reductions in noise levels occurred at Locations 1,4, 11, and A. Locations 1, 2, 3, 4, 5, 7, 12, and A all are shown to exceed the 50 decibel daytime property limit. No mitigation measures for the Presentation Area are implemented in this estimate. Mitigation measure 6 from Section 7 of this report would reduce Alternative I daytime property limit noise impacts to below 50 decibels.

The relocation of the Retreat Area results in a modification of the distances listed in Table 22. These distances have been adjusted for the HVAC units in Table 31 and the new noise levels provided in Table 32.

TABLE 31

**ALTERNATIVE I DISTANCE FROM STRUCTURES TO THE PROPERTY
LINE POINTS AND RESIDENCES FOR HVAC EQUIPMENT**

BLDG	LOCATION															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	B
1	2.7	1.3	0.3	1.9	4.6	5.2	5.5	5.9	5.9	5.5	3.7	3.4	4.8	6.2	2.9	4.2
2.	1.9	1.0	1.1	3.1	2.6	3.8	4.5	5.1	5.1	4.5	3.1	2.7	3.7	5.0	2.1	3.2
3.	1.4	1.7	2.6	4.7	2.8	2.6	3.1	3.7	3.7	3.2	1.9	1.9	2.4	3.7	1.6	2.1
4.	1.8	2.3	2.8	4.6	2.9	2.2	2.9	3.6	3.6	3.2	2.0	2.2	2.1	3.4	2.0	2.2
5.	0.9	1.3	2.2	4.2	3.1	3.2	3.6	4.0	4.0	3.5	2.0	1.6	2.8	4.1	1.2	1.9
6.	0.9	1.3	2.2	4.2	3.1	3.2	3.6	4.0	4.0	3.5	2.0	1.6	2.8	4.1	1.2	1.9
7.	0.9	1.3	2.2	4.2	3.1	3.2	3.6	4.0	4.0	3.5	2.0	1.6	2.8	4.1	1.2	1.9
8.	0.9	1.6	2.5	4.6	3.3	2.9	3.2	3.7	3.7	3.2	1.6	1.3	2.8	4.1	1.2	1.9
9.	1.1	0.7	1.6	3.7	3.2	3.7	4.0	4.7	2.0	4.0	2.5	2.0	3.5	4.8	1.4	2.6
10	0.7	2.2	3.3	1.9	4.4	3.3	3.2	3.3	3.3	2.5	0.9	0.2	2.5	3.6	0.6	0.8
12.	2.1	3.2	4.0	6.0	4.4	2.3	1.7	2.2	2.2	1.6	0.7	1.5	1.3	2.8	1.8	0.8
13.	2.3	3.4	4.2	6.2	4.5	2.8	1.5	2.0	2.0	1.3	0.7	1.7	1.1	2.1	2.0	0.8
14.	2.3	3.4	4.3	6.3	4.6	2.4	1.6	2.0	2.0	1.2	0.7	1.6	1.2	2.2	2.1	0.7
15.	2.1	3.4	4.3	6.3	4.9	2.6	1.8	2.1	2.1	1.2	0.6	1.5	1.4	2.3	2.0	0.5
16.	1.7	3.0	3.9	6.1	4.6	2.8	2.1	2.4	2.4	1.6	0.2	1.1	1.6	2.6	1.5	0.3

Notes: Distances listed are Distance/1000 feet.

Source Code #: 1 = Staff Housing; 2 = New Cabins; 3 = Education Group; 4 = Classroom;
5 = Dining HP1; 6 = Dining HP2; 7 = Dining CU1; 8 = Multipurpose/Theater; 9 = Administration;
10 = Maintenance; 12 = Retreat 2; 13 = Retreat 3; 14 = Retreat 4; 15 = Retreat 5;
16 = Retreat 6.

TABLE 32

**ALTERNATIVE I AVERAGE NOISE LEVEL FROM THE HVAC UNITS AT (1)
THE PROPERTY LINE POINTS AND RESIDENCES**

BLDG	LOCATION																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	B	C	D
1	*	*	*	37	30	29	*	*	*	*	*	*	*	*	*	*	*	*
2.	36	39	38	29	31	27	26	25	25	26	29	30	28	25	33	29	23	23
3.	36	44	41	36	27	34	32	31	31	32	34	33	34	31	35	35	29	29
4.	31	29	27	23	27	29	27	25	25	26	30	29	30	25	30	29	23	23
5.	34	31	26	21	23	23	22	21	21	22	27	29	24	21	31	27	19	19
6.	40	37	32	27	29	29	28	27	27	28	33	35	30	27	37	33	25	25
7.	37	34	29	24	26	26	*	*	*	*	*	32	*	*	34	*	*	*
8.	40	36	32	27	30	31	30	29	29	30	36	38	31	28	38	34	26	26
9.	35	*	*	*	26	25	24	23	30	24	28	30	25	22	33	28	22	22
10.	34	34	31	25	18	21	21	21	23	23	32	*	23	20	35	33	19	18
12.	17	13	11	7	10	16	18	16	16	19	26	20	21	14	18	25	14	14
13.	16	12	11	7	10	16	20	17	17	21	26	18	22	17	17	25	14	15
14.	16	12	10	7	10	15	19	17	17	21	26	19	21	16	17	26	14	15
15.	17	12	10	7	9	15	18	17	16	21	27	20	20	16	17	29	14	15
16.	18	14	11	17	10	14	17	15	15	19	37	22	19	15	20	34	13	14
TOTAL	46	47	44	41	38	40	37	42	44	44	44	43	40	39	45	43	37	36

Notes: * = situations where the location is completely shielded from the HVAC for the structure listed.
Source Code #: 1 = Staff Housing; 2 = New Cabins; 3 = Education Group; 4 = Classroom;
5 = Dining HP1; 6 = Dining HP2; 7 = Dining CUL; 8 = Multipurpose/Theater; 9 = Administration;
10 = Maintenance; 12 = Retreat 2; 13 = Retreat 3; 14 = Retreat 4; 15 = Retreat 5;
16 = Retreat 6.

There were no changes in the HVAC impacts as a result of this Alternate with the exception of Location 11 which increased by two dBA.

6.0 REDUCED ALTERNATIVE II

This reduced alternative is shown on Exhibit 16. It retains most of the elements of the proposed project. The major differences are that the Retreat Center will be moved to the large parking area with one 16 unit building and one 18 unit building eliminated, the Multipurpose Building reduced in square footage, the Tent Camp/Yurts including Presentation Area 3 eliminated and two education buildings eliminated.

The distances are listed in Table 33 and the levels for Alternative II is shown in Table 34.

TABLE 33

**ALTERNATIVE II DISTANCES TO PROPERTY LINE POINTS
AND RESIDENCES FOR ACTIVITY AREAS**

SOURCE	LOCATION															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	B
A.	2.9	1.5	0.3	1.9	3.1	5.2	5.8	6.5	6.5	5.8	4.2	3.7	5.0	6.3	3.2	4.4
B.	2.4	1.1	0.7	2.5	2.8	4.3	5.2	5.9	5.9	5.9	3.6	3.1	4.3	5.6	2.7	3.8
C.	1.0	0.7	1.6	3.8	3.4	3.7	4.0	4.6	4.6	4.6	2.3	1.8	3.5	4.6	1.2	2.4
D.	2.4	1.3	0.7	2.5	2.4	4.4	5.1	5.7	5.7	5.7	3.7	3.2	4.3	5.6	2.8	3.8
E.	1.2	0.3	1.4	3.6	3.5	4.2	4.5	5.0	5.0	5.0	2.8	2.0	3.7	5.1	1.4	2.7
F.	1.9	2.9	2.8	4.6	2.6	2.2	2.7	3.6	3.6	3.6	2.1	2.2	2.1	3.4	2.1	2.2
G.	1.1	1.1	1.8	3.7	3.0	3.5	3.8	4.4	4.4	4.4	2.3	1.9	3.2	4.1	1.4	2.4
I.	0.9	1.3	2.2	4.3	3.2	3.2	3.5	4.2	4.2	4.2	2.0	1.6	2.8	4.1	1.2	2.0
J.	0.9	1.6	2.5	4.5	3.3	2.9	3.2	3.7	3.7	3.7	1.6	1.3	2.5	3.8	1.0	1.7
K.	0.8	2.2	2.6	5.6	4.4	3.4	3.2	3.3	3.3	3.3	0.9	0.2	2.5	3.6	0.5	1.4
L.	1.2	0.6	1.5	3.7	3.2	3.8	4.2	4.7	4.7	4.7	2.6	2.0	3.6	4.9	1.5	2.6
M.	1.9	3.2	4.2	6.3	4.5	2.6	1.9	2.2	2.2	1.4	0.3	1.2	1.5	2.4	1.7	0.4

Notes: Distances listed are Distance/1000 feet.

Source Code #: A = Rope Course, B = Existing Pool, C = Bus Drop Off, D = Sports Courts,
E = Basketball, F = Presentation Area 1, G = Presentation Area 2, H = Presentation Area 3,
I = Dining; J = Multipurpose, K = Maintenance, L = New Pool, M = Retreat Pool

TABLE 34

**ALTERNATIVE II AVERAGE NOISE LEVEL AT PROPERTY LINE
POINTS AND RESIDENCES FOR ACTIVITY AREAS**

SOURCE	LOCATION															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	B
A.	25	31	44	28	24	20	19	18	18	19	22	23	20	18	24	21
B.	30	37	41	30	29	25	24	23	23	24	27	28	25	23	30	26
C.	42	45	38	30	31	31	30	29	29	30	35	37	31	29	40	34
D.	28	34	39	28	28	23	22	21	21	22	25	26	23	21	27	24
E.	34	42	33	25	25	24	23	22	22	23	27	30	25	22	33	27
F.	38	32	35	41	56	47	55	33	33	33	37	37	48	43	38	37
G.	53	63	59	53	54	33	32	31	31	31	37	38	34	32	51	36
I.	40	37	32	26	29	29	28	27	27	28	33	35	30	27	38	33
J.	42	37	33	28	31	32	30	30	30	31	37	39	33	30	41	36
K.	36	27	26	19	21	23	27	24	24	26	35	48	26	23	40	31
L.	36	42	35	27	28	26	26	25	25	26	30	32	27	26	36	30
M.	31	27	25	21	24	29	31	30	31	34	47	35	33	29	32	45
TOTAL	54	63	59	53	57	48	55	40	40	41	50	51	49	45	53	47

Notes: Source Code #: A = Rope Course, B = Existing Pool, C = Bus Drop Off, D = Sports Courts,
E = Basketball, F = Presentation Area 1, G = Presentation Area 2, I = Dining;
J = Multipurpose, K = Maintenance, L = New Pool, M = Retreat Pool.

Locations 1, 2, 3, 4, 7, 12, and A all are shown to exceed the 50 decibel daytime property limit. No mitigation measures for the Presentation Areas are implemented in this estimate. Mitigation measure 6 from Section 7 of this report would reduce Alternative II daytime property limit noise impacts to below 50 decibels.

The HVAC count will be modified as a result of the elimination of units in the Education Group and the reduction of two buildings in the Retreat Area. The composite Education Group levels drop only one decibel and Retreat 1 and 2 are eliminated. The distances listed in Table 31 remain the same less the changes and the resulting noise levels are shown on Table 35 on the following page.

TABLE 35

ALTERNATIVE II AVERAGE NOISE LEVEL FROM THE HVAC UNITS AT
THE PROPERTY LINE POINTS AND RESIDENCES

BLDG	LOCATION																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	B	C	D
1	*	*	*	37	30	29	*	*	*	*	*	*	*	*	*	*	*	*
2.	36	39	38	29	31	27	26	25	25	26	29	30	28	25	33	29	23	23
3.	35	43	40	35	26	33	31	30	30	31	33	33	33	30	34	34	28	28
4.	31	29	27	23	27	29	27	25	25	26	30	29	30	25	30	29	23	23
5.	34	31	26	21	23	23	22	21	21	22	27	29	24	21	31	27	19	19
6.	40	37	32	27	29	29	28	27	27	28	33	35	30	27	37	33	25	25
7.	37	34	29	24	26	26	*	*	*	*	*	32	*	*	34	*	*	*
8.	40	36	32	27	30	31	30	29	29	30	36	38	31	28	38	34	26	26
9.	35	*	*	*	26	25	24	23	30	24	28	30	25	22	33	28	22	22
10.	34	34	31	25	18	21	21	21	23	23	32	*	23	20	35	33	19	18
13.	16	12	11	7	10	16	20	17	17	21	26	18	22	17	17	25	14	15
14.	16	12	10	7	10	15	19	17	17	21	26	19	21	16	17	26	14	15
15.	17	12	10	7	9	15	18	17	16	21	27	20	20	16	17	29	14	15
16.	18	14	11	17	10	14	17	15	15	19	37	22	19	15	20	34	13	14
TOTAL	46	47	44	41	38	40	37	42	44	44	44	43	40	39	45	43	37	36

Notes: * = situations where the location is completely shielded from the HVAC for the structure listed.
Source Code #: 1 = Staff Housing; 2 = New Cabins; 3 = Education Group; 4 = Classroom;
5 = Dining HP1; 6 = Dining HP2; 7 = Dining CU1; 8 = Multipurpose/Theater;
9 = Administration; 10 = Maintenance; 13 = Retreat 3; 14 = Retreat 4; 15 = Retreat 5;
16 = Retreat 6.

The results indicate no changes from the changes that occur with Alternate I.

7.0 MITIGATION MEASURES

The analysis only points to potential impacts based on the present plan and data. The impacts may be mitigated by a combination of measures. There are other items that must be prohibited lest they pose possible noise problems. Examples include paging systems, and off-road vehicles. Therefore, the following mitigation measures are intended as a guide to the project as it develops:

1. All residential air conditioning units at the Retreat (HP3) shall have a Sound Rating of 7.0 Bels or less per the American Refrigeration Institute(ARI) test procedure. Units designated HP1 shall not exceed a Sound Rating of 9.3 Bels. Units designated HP2 shall not exceed a Sound Rating of 9.6 Bels. Units designated CU1 and CU2 shall not exceed a Sound Rating of 8.9 Bels.
2. There shall be no outside amplified paging systems.
3. There shall be no off-highway vehicles or courses.

4. Powered model aircraft shall not be permitted unless subject to a County permit.
5. Outdoor band practice is not allowed.
6. The use of sound amplifying equipment as defined by the County Ordinance (Section 36.402) at any outdoor location is prohibited. All indoor activities involving the use of sound amplifying equipment shall comply with the noise limits defined in the County Noise Ordinance (Section 36.404). Sound amplification equipment shall also include radios, televisions, or any device that mechanically or electronically amplifies an audio or electric signal.
7. The use of acoustic (non-electronic) sound producing equipment used for such activities as a morning reveille or evening taps shall be permitted.
8. All construction activities shall require the use of temporary sound barriers for operations within 125 feet of any project boundary. Such sound barriers shall be a minimum eight feet in height. The insertion loss shall be a minimum of five dBA. Barriers shall be located between the source and the property line at a maximum of 40 feet from the source. At distances under 40 feet the operations shall not be conducted or more than 24 minutes in an hour
9. Activity and major maintenance activity shall be limited to August 16 through January 31 unless nest monitoring conducted by a qualified biologist indicates the absence of nest activity or completion of the breeding season.
10. When performing maintenance activities within potential noise violation areas (NVAs), maintenance crew shall execute activities exclusively with non-motorized tools in accordance with posted signs and Salvation Army Procedures Manual. The Salvation Army Procedures Manual is attached in Appendix 9.

8.0 EFFECTS OF MITIGATION

The primary effects of the proposed mitigation measures are the reduction of the sound levels of the Presentation Areas and Air Conditioning below the limits of the Noise Ordinance.

The revised listings are shown in Tables 36 and 37.

TABLE 36
MITIGATED AVERAGE NOISE LEVEL AT PROPERTY LINE
POINTS AND RESIDENCES FOR ACTIVITY AREAS

SOURCE	LOCATION															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	B
A.	25	31	44	28	24	20	19	18	18	19	22	23	20	18	24	21
B.	30	37	41	30	29	25	24	23	23	24	27	28	25	23	30	26
C.	42	45	38	30	31	31	30	29	29	30	35	37	31	29	40	34
D.	28	34	39	28	28	23	22	21	21	22	25	26	23	21	27	24
E.	34	42	33	25	25	24	23	22	22	23	27	30	25	22	33	27
F.	18	12	15	21	36	27	35	13	13	13	17	17	28	23	18	17
G.	33	43	39	33	34	13	12	11	11	11	17	18	14	12	31	16
H.	32	36	33	29	22	17	16	15	15	15	27	24	19	15	33	23
I.	40	37	32	26	29	29	28	27	7	28	33	35	30	27	38	33
J.	42	37	33	28	31	32	30	30	30	31	37	39	33	30	41	36
K.	36	27	26	19	21	23	27	24	24	26	35	48	26	23	40	31
L.	36	42	35	27	28	26	26	25	25	26	30	32	27	26	36	30
M.	26	23	22	19	23	31	41	47	45	37	30	27	36	41	26	30
TOTAL	49	50	50	41	42	37	43	47	45	39	43	50	40	41	47	41

Notes: Source Code #: A = Rope Course, B = Existing Pool, C = Bus Drop Off, D = Sports Courts, E = Basketball, F = Presentation Area 1, G = Presentation Area 2, H = Presentation Area 3, I = Dining; J = Multipurpose, K = Maintenance, L = New Pool, M = Retreat Pool

TABLE 37
MITIGATED AVERAGE NOISE LEVEL FROM THE HVAC UNITS AT (1)
THE PROPERTY LINE POINTS AND RESIDENCES

BLDG	LOCATION															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	B
1	*	*	*	35	28	29	*	*	*	*	*	*	*	*	*	*
2	34	37	36	27	29	25	24	23	23	24	27	28	26	23	31	27
3	38	36	33	28	25	33	31	30	30	31	35	35	33	30	37	37
4	29	27	25	21	25	27	25	23	23	24	28	27	28	23	28	27
5	34	31	26	21	23	23	22	21	21	22	27	29	24	21	31	27
6	39	36	31	26	28	28	26	26	26	27	32	34	29	26	36	32
7	35	32	27	22	24	24	*	*	*	*	*	32	*	*	34	*
8	38	34	30	25	28	29	28	27	27	28	34	36	29	26	36	32
9.	33	*	*	*	24	23	22	21	28	22	26	28	23	20	31	26
10.	32	32	29	23	16	19	19	19	21	21	30	*	21	18	33	31
11.	13	10	8	6	9	14	22	25	25	23	19	15	21	19	13	18
12.	12	10	8	5	9	14	24	27	27	22	17	14	20	21	12	17
13.	12	9	8	5	9	14	24	33	31	20	16	13	19	24	12	16
14.	12	9	8	5	8	12	21	31	37	22	16	13	17	21	12	16
15.	12	9	8	5	8	12	20	27	31	24	17	13	18	20	12	17
16.	23	20	19	17	19	26	34	37	38	40	29	25	32	33	24	29
TOTAL	45	44	40	38	36	38	38	39	43	42	41	42	39	37	44	41

Notes: * = situations where the location is completely shielded from the HVAC for the structure listed.

Source Code #: 1 = Staff Housing; 2 = New Cabins; 3 = Education Group; 4 = Classroom; 5 = Dining HP1; 6 = Dining HP2; 7 = Dining CUL; 8 = Multipurpose/Theater; 9 = Administration; 10 = Maintenance; 11 = Retreat 1; 12 = Retreat 2; 13 = Retreat 3; 14 = Retreat 4; 15 = Retreat 5; 16 = Retreat 6.

The measures will also serve to keep the noise levels of the individual Activity Areas under the daytime limit of 50 dBA Leq. These Activity Areas are essentially just daytime uses. The cumulative of all Activity Areas exceeds 50 dBA Leq in some locations. However, it is not likely all the areas would be in use at the same time as implied by the cumulative figure. The HVAC units could all be operated at the same time and at nighttime too. The individual and total noise levels do not exceed the nighttime limit of 45 dBA Leq.

EXHIBIT 1 SITE LOCATION MAP

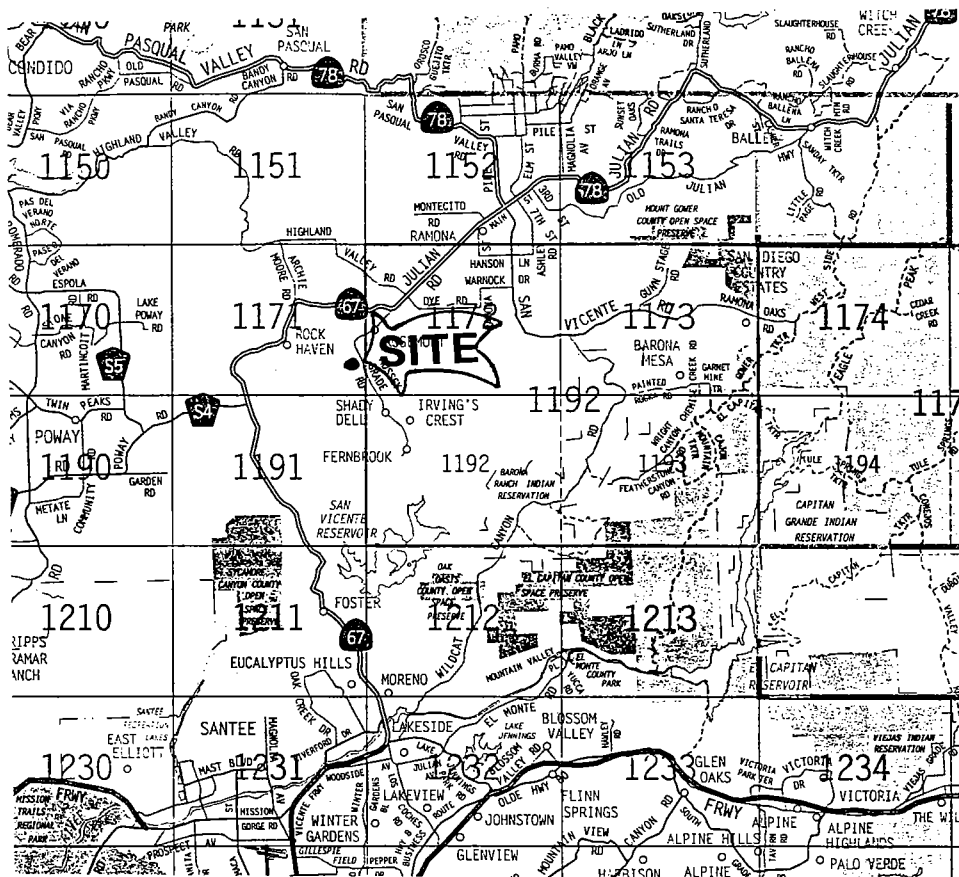
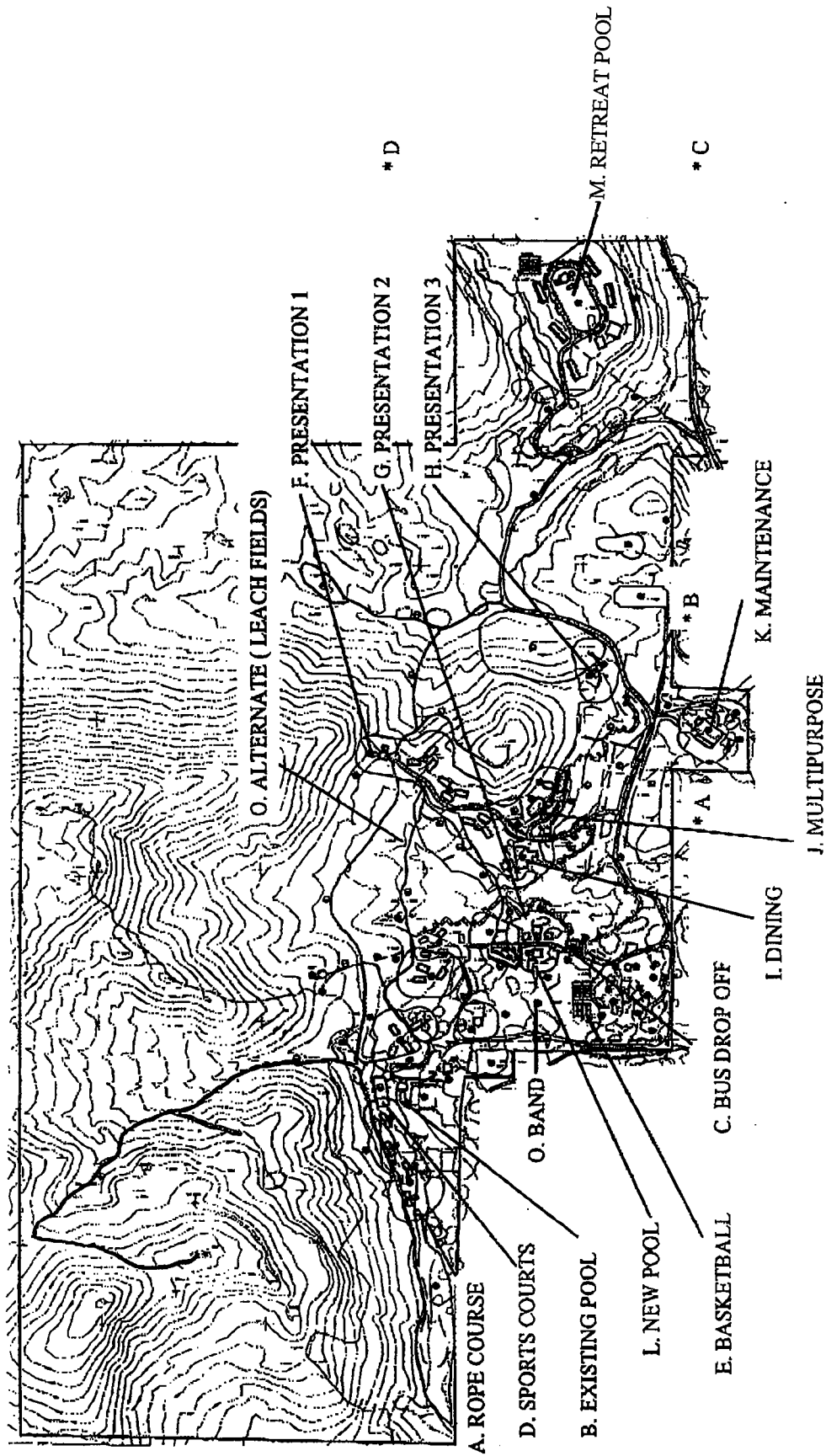
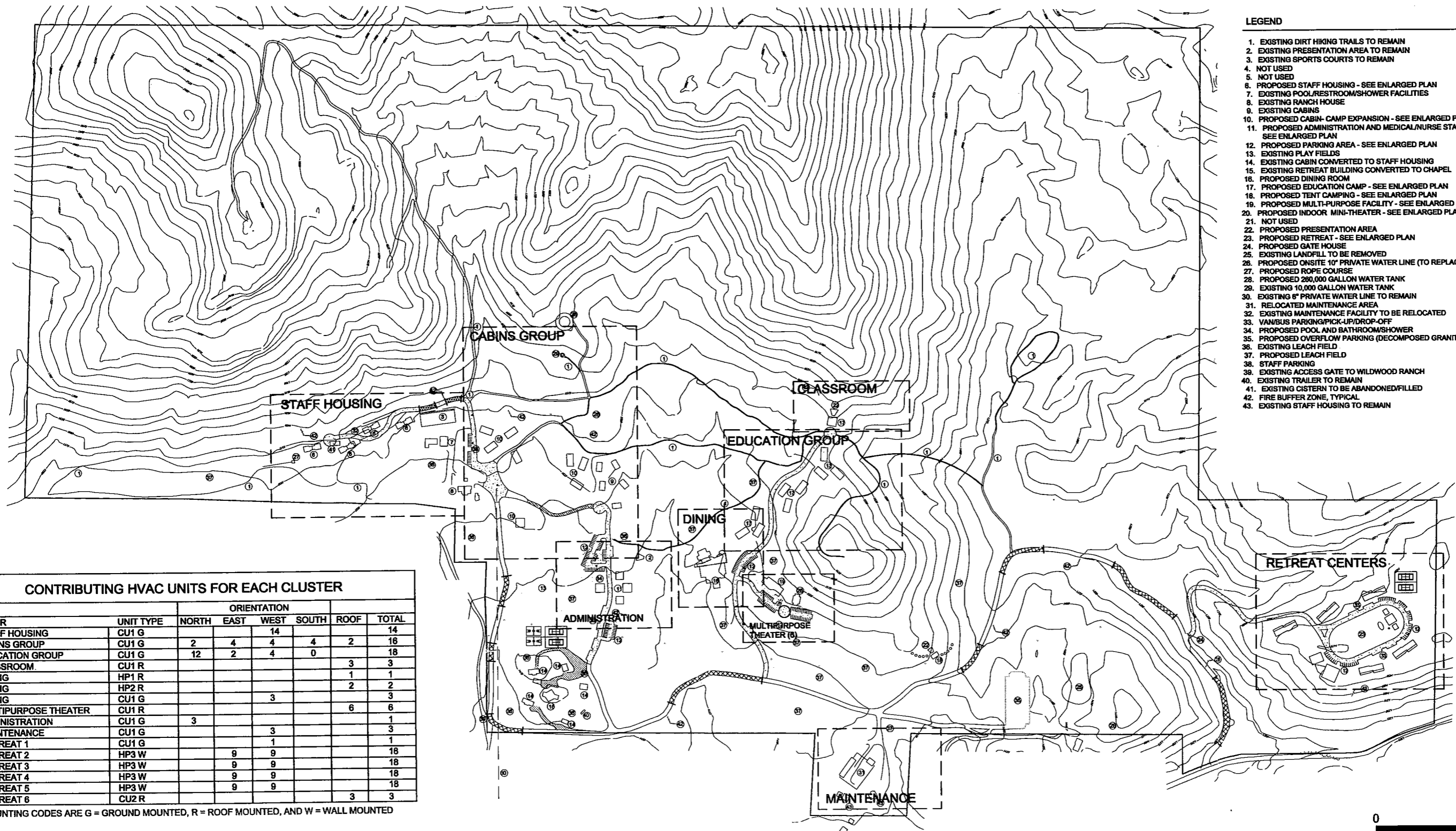


EXHIBIT 2 ACTIVITY AREAS



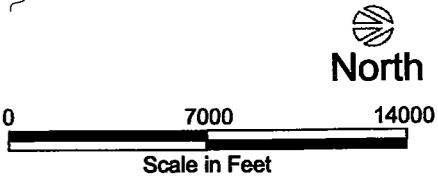
Approximate Scale 1" = 1,000'
 * A = Off site residential location



- LEGEND**
- EXISTING DIRT HIKING TRAILS TO REMAIN
 - EXISTING PRESENTATION AREA TO REMAIN
 - EXISTING SPORTS COURTS TO REMAIN
 - NOT USED
 - NOT USED
 - PROPOSED STAFF HOUSING - SEE ENLARGED PLAN
 - EXISTING POOL/RESTROOM/SHOWER FACILITIES
 - EXISTING RANCH HOUSE
 - EXISTING CABINS
 - PROPOSED CABIN- CAMP EXPANSION - SEE ENLARGED PLAN
 - PROPOSED ADMINISTRATION AND MEDICAL/NURSE STATION AND SHOP/CANTEEN - SEE ENLARGED PLAN
 - PROPOSED PARKING AREA - SEE ENLARGED PLAN
 - EXISTING PLAY FIELDS
 - EXISTING CABIN CONVERTED TO STAFF HOUSING
 - EXISTING RETREAT BUILDING CONVERTED TO CHAPEL
 - PROPOSED DINING ROOM
 - PROPOSED EDUCATION CAMP - SEE ENLARGED PLAN
 - PROPOSED TENT CAMPING - SEE ENLARGED PLAN
 - PROPOSED MULTI-PURPOSE FACILITY - SEE ENLARGED PLAN
 - PROPOSED INDOOR MINI-THEATER - SEE ENLARGED PLAN
 - NOT USED
 - PROPOSED PRESENTATION AREA
 - PROPOSED RETREAT - SEE ENLARGED PLAN
 - PROPOSED GATE HOUSE
 - EXISTING LANDFILL TO BE REMOVED
 - PROPOSED ONSITE 10" PRIVATE WATER LINE (TO REPLACE EXISTING ONSITE 6" WATER LINE)
 - PROPOSED ROPE COURSE
 - PROPOSED 200,000 GALLON WATER TANK
 - EXISTING 10,000 GALLON WATER TANK
 - EXISTING 8" PRIVATE WATER LINE TO REMAIN
 - RELOCATED MAINTENANCE AREA
 - EXISTING MAINTENANCE FACILITY TO BE RELOCATED
 - VAN/BUS PARKING/PICK-UP/DROP-OFF
 - PROPOSED POOL AND BATHROOM/SHOWER
 - PROPOSED OVERFLOW PARKING (DECOMPOSED GRANITE)
 - EXISTING LEACH FIELD
 - PROPOSED LEACH FIELD
 - STAFF PARKING
 - EXISTING ACCESS GATE TO WILDWOOD RANCH
 - EXISTING TRAILER TO REMAIN
 - EXISTING CISTERN TO BE ABANDONED/FILLED
 - FIRE BUFFER ZONE, TYPICAL
 - EXISTING STAFF HOUSING TO REMAIN

CONTRIBUTING HVAC UNITS FOR EACH CLUSTER							
CLUSTER	UNIT TYPE	ORIENTATION				ROOF	TOTAL
		NORTH	EAST	WEST	SOUTH		
1. STAFF HOUSING	CU1 G			14			14
2. CABINS GROUP	CU1 G	2	4	4	4	2	16
3. EDUCATION GROUP	CU1 G	12	2	4	0		18
4. CLASSROOM	CU1 R					3	3
5. DINING	HP1 R					1	1
6. DINING	HP2 R					2	2
7. DINING	CU1 G			3			3
8. MULTIPURPOSE THEATER	CU1 R					6	6
9. ADMINISTRATION	CU1 G	3					3
10. MAINTENANCE	CU1 G			3			3
11. RETREAT 1	CU1 G			1			1
12. RETREAT 2	HP3 W		9	9			18
13. RETREAT 3	HP3 W		9	9			18
14. RETREAT 4	HP3 W		9	9			18
15. RETREAT 5	HP3 W		9	9			18
16. RETREAT 6	CU2 R					3	3

THE MOUNTING CODES ARE G = GROUND MOUNTED, R = ROOF MOUNTED, AND W = WALL MOUNTED



BASEMAP: Matalon and Associates, 2003.; SOURCE: Nasland Engineering, 2003.; Matalon and Associates, 2003.; BRG Consulting, Inc., 2003.

03/19/03



BRG CONSULTING, INC.

Salvation Army Divisional Camp and Retreat

HVAC Locations

EXHIBIT

3

EXHIBIT 4

DATE 3/17/99

CHART SPEED .3mm

SCALE A

LOCATION SIERRA DEL MAR

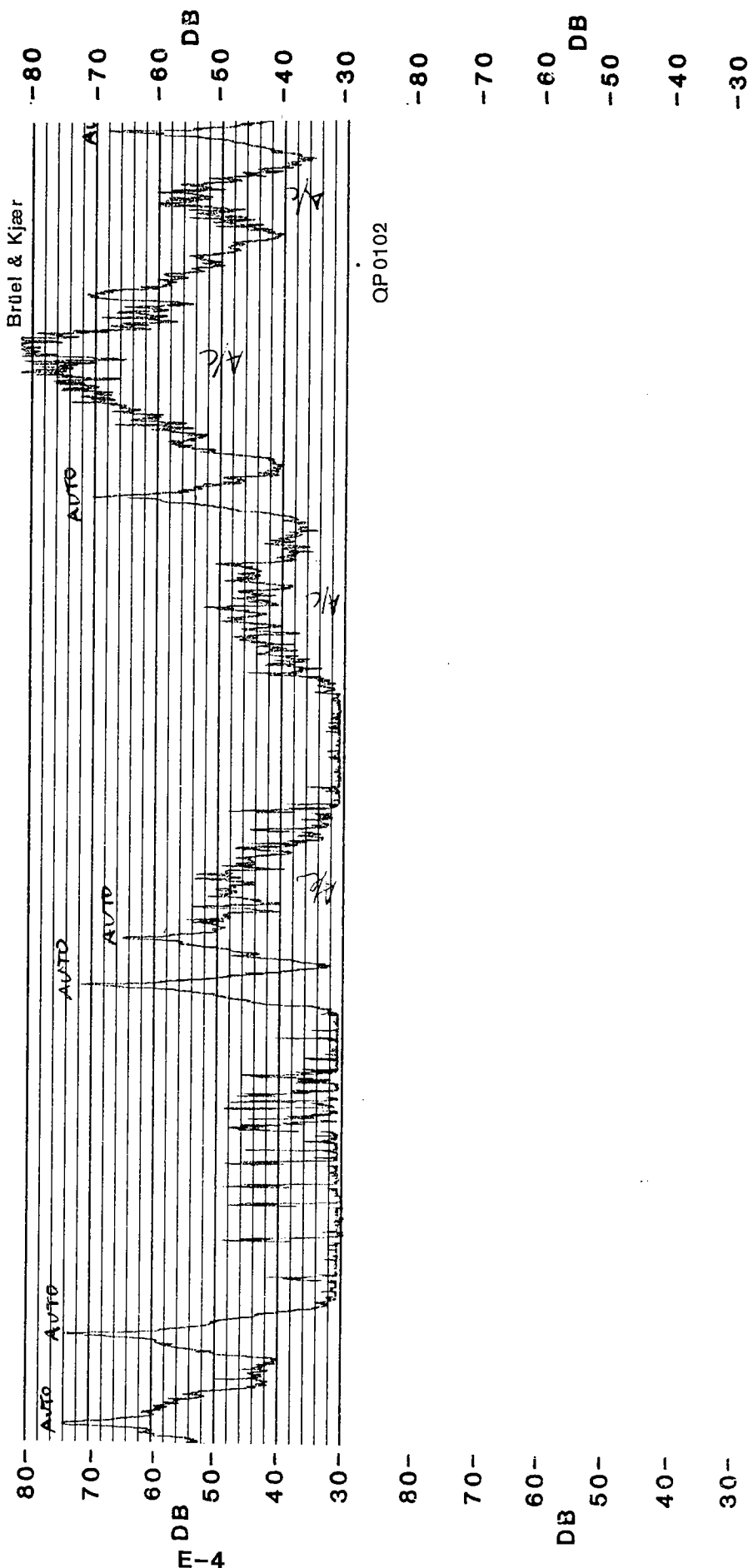
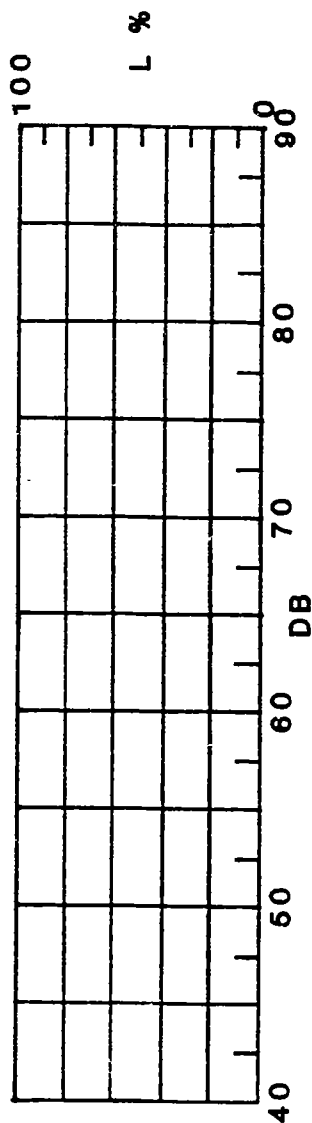


EXHIBIT 5

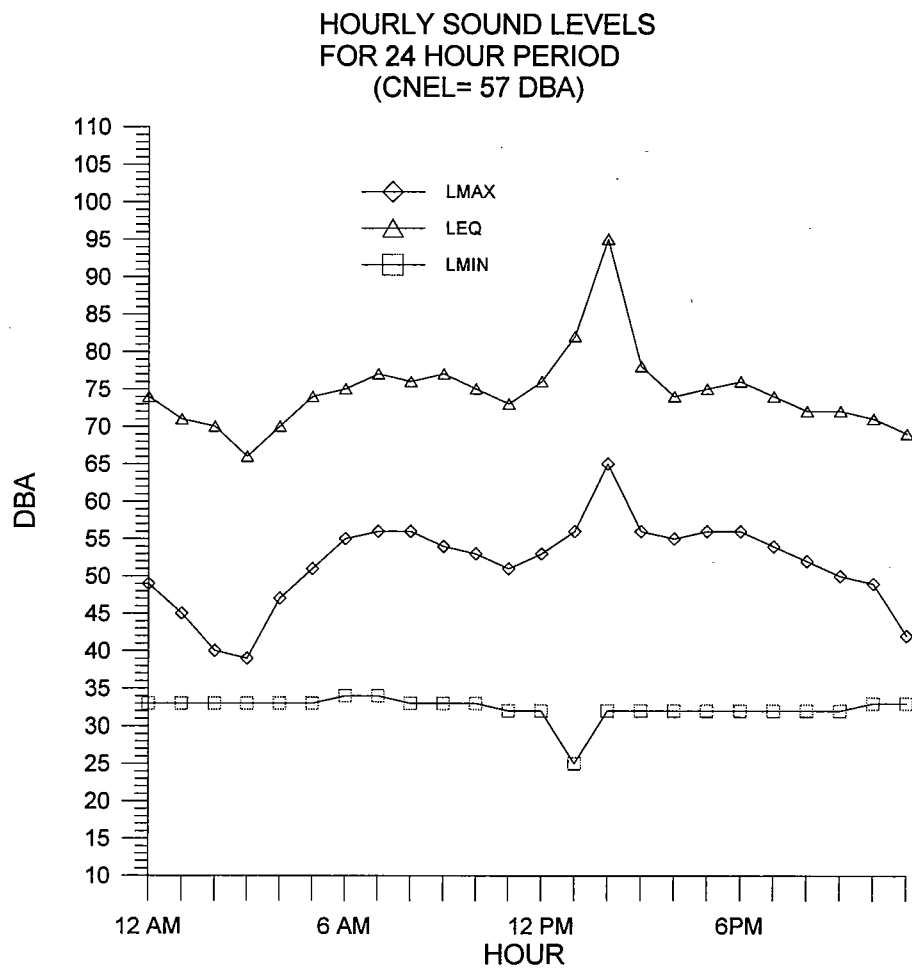


EXHIBIT 6

TYPICAL STATISTICAL CURVES
DAY AND NIGHT AT 100 FEET FROM
CENTERLINE OF MUSSEY GRADE ROAD

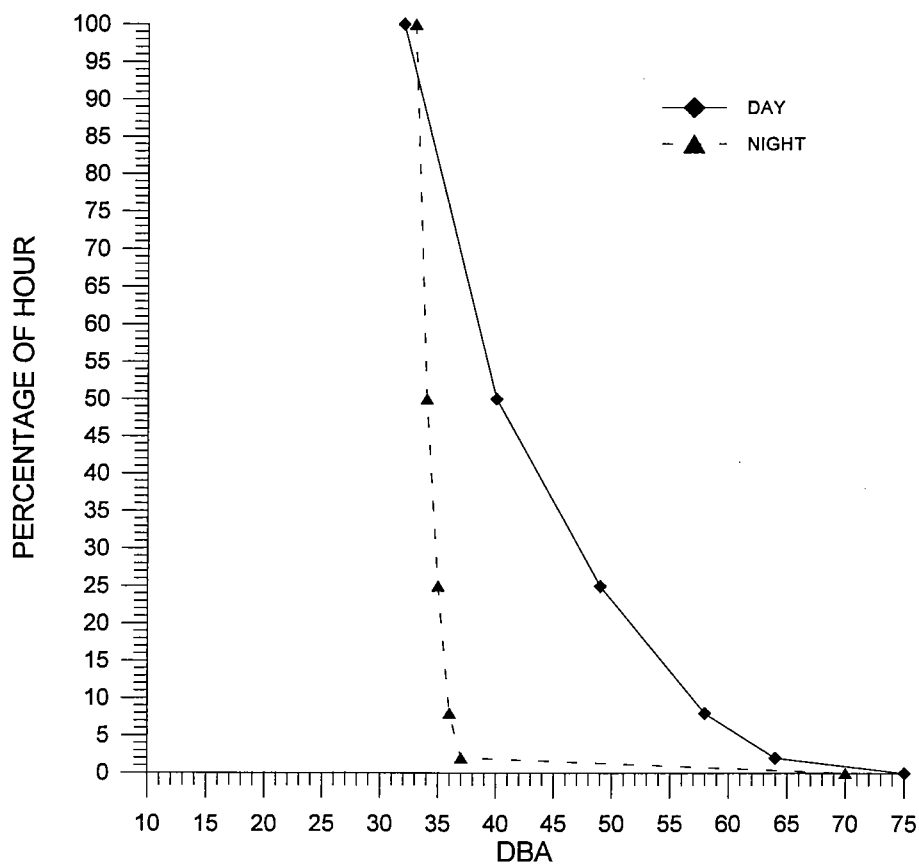
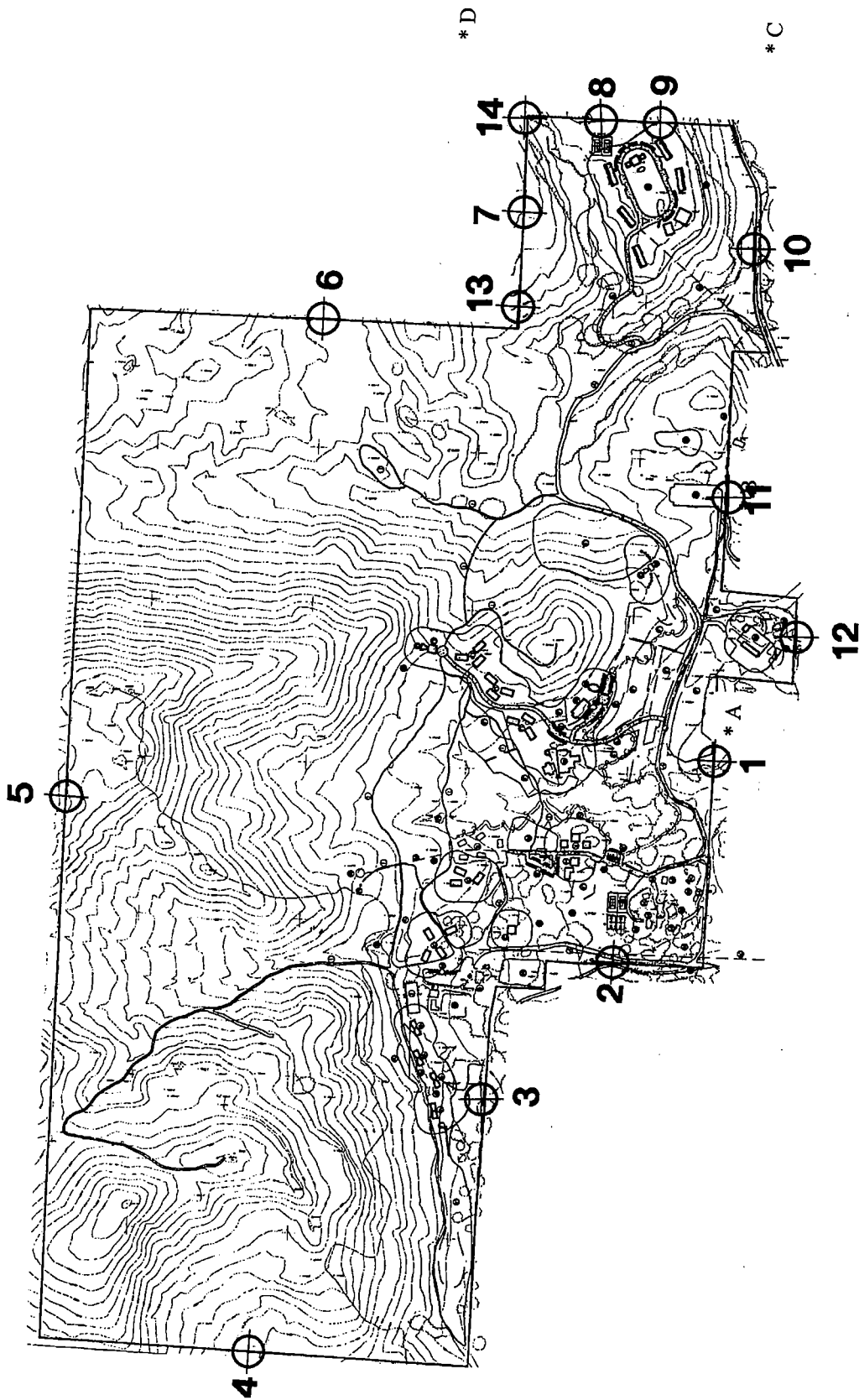
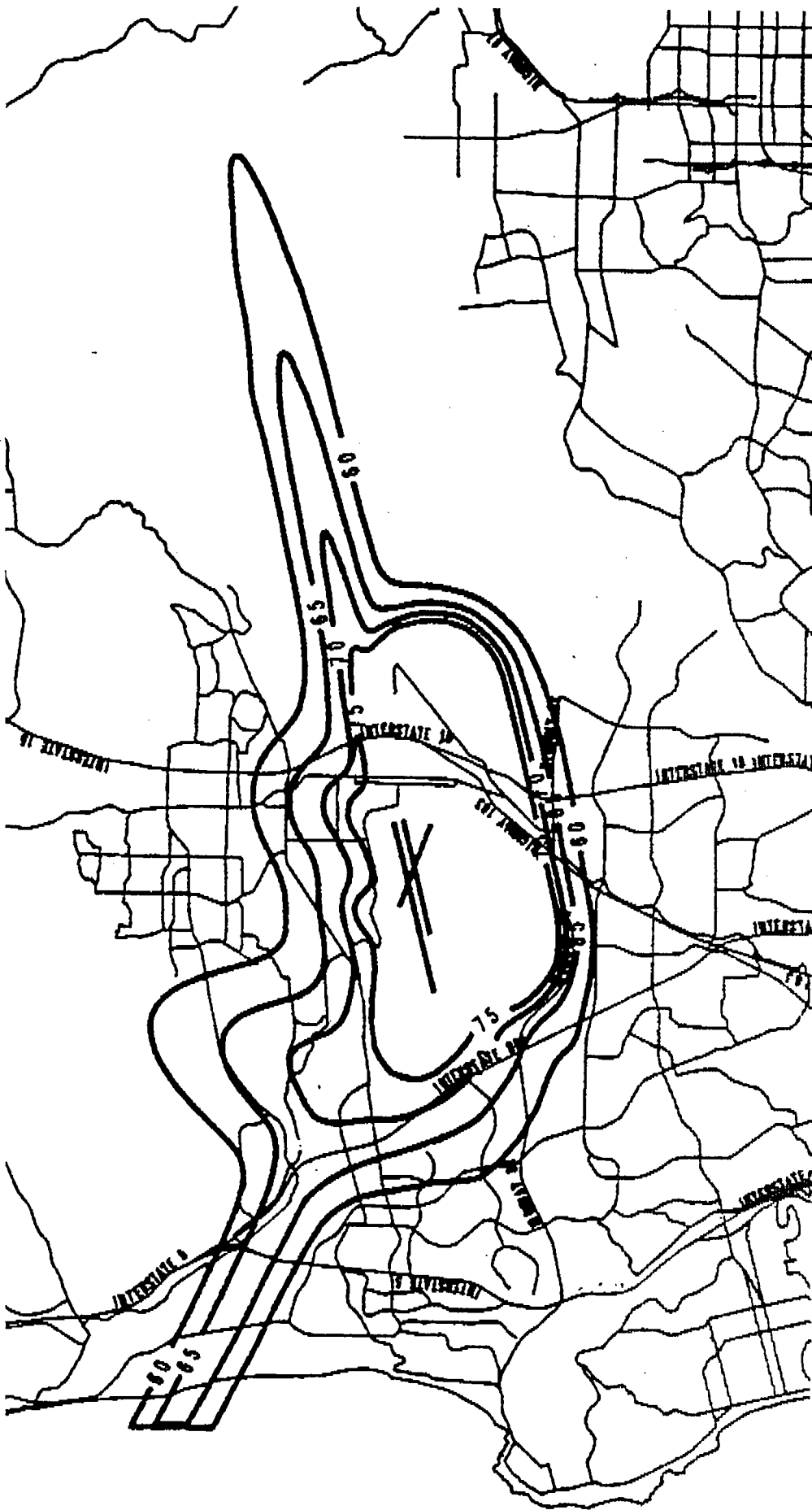


EXHIBIT 7 CALCULATION POINTS



Approximate Scale 1 " = 1,000 '
 * A = Off site residential location

EXHIBIT 8



Proposed CNE's

Freeway

Major Highways, Access Roads

Arterial Collector

Railroads

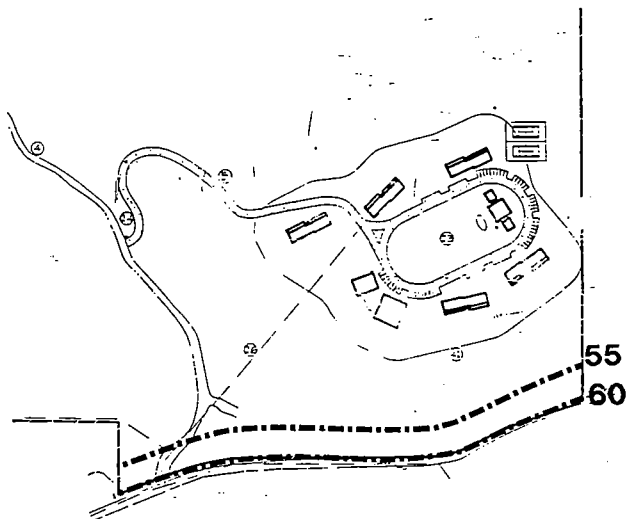


San Diego Association of Governments

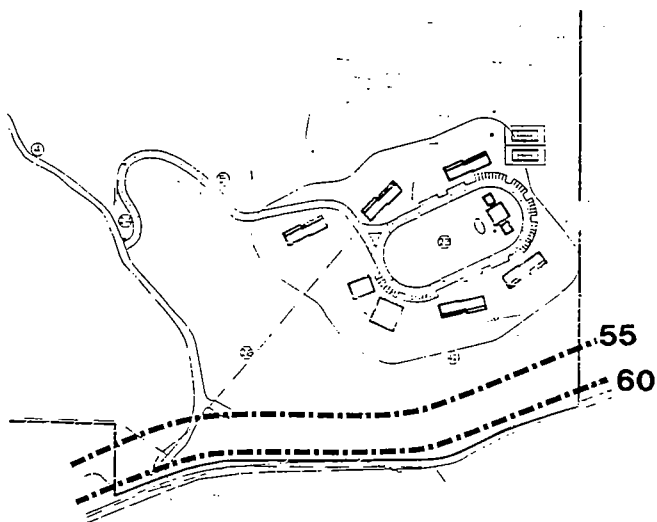
November 8, 1989

PROPOSED NAS MIRAMAR CNE'S

EXHIBIT 9 MUSSEY GRADE CNEL CONTOURS



EXISTING

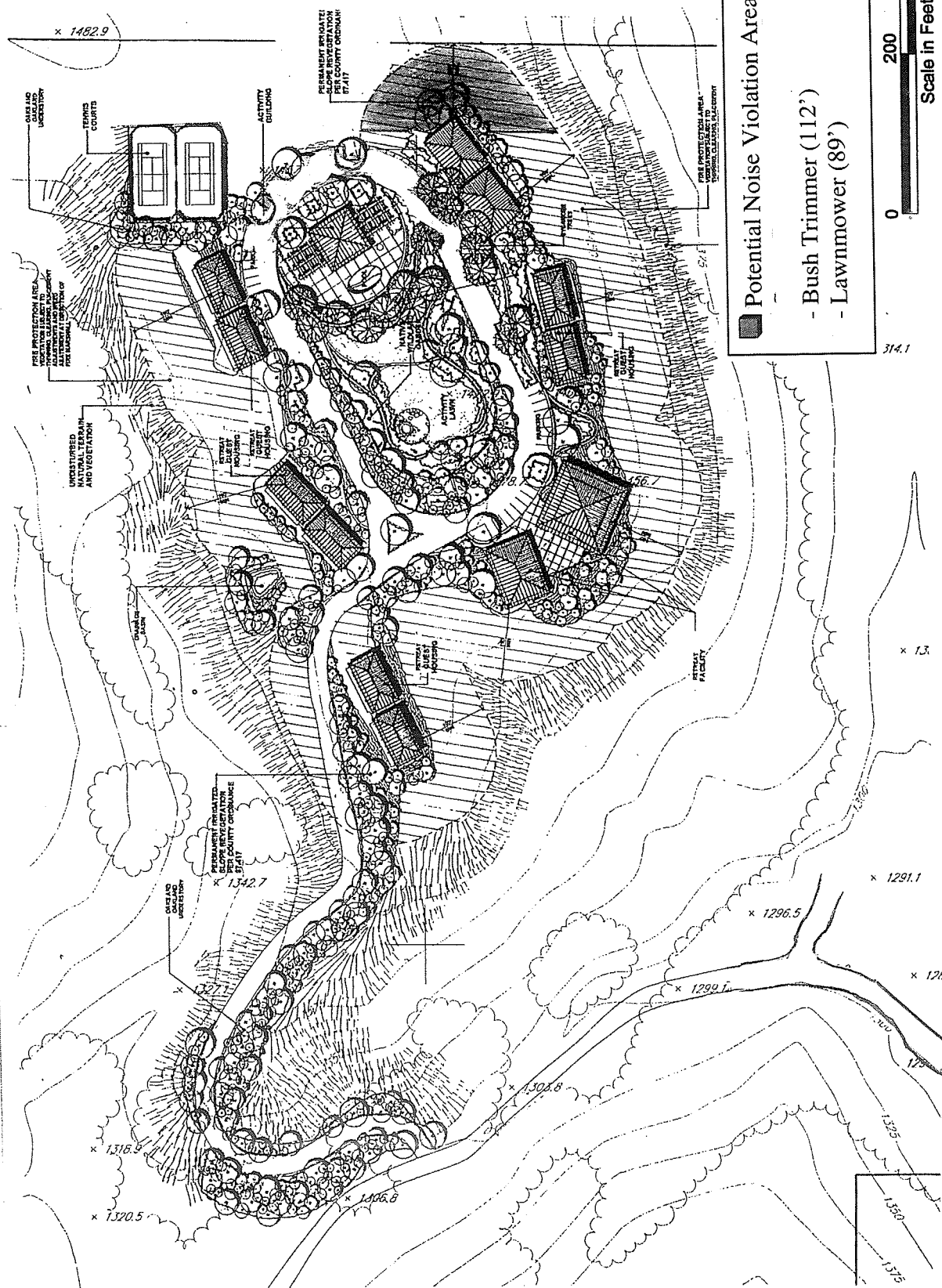


EXISTING PLUS PROJECT PLUS CUMULATIVE

EXHIBIT 10 HVAC SPECIFICATIONS

SOUND POWER SCHEDULE CABINET RADIATION 10-12 WATTS												
SYMBOL	DESCRIPTION	MOUNTING LOCATION	CAPACITY	OCTAVE BAND NUMBER								LWA
				1	2	3	4	5	6	7	8	
HP 1	HEAT PUMP TRANE: WCD180	ROOF	COOLING: 180 MBH HEATING: 80 MBH	90.5	96.5	91.5	91.0	88.5	82.0	76.5	70.5	93.0
HP 2	HEAT PUMP TRANE: WCD240	ROOF	COOLING: 240 MBH HEATING: 125 MBH	102.0	98.0	96.0	93.0	91.0	88.0	83.0	79.5	96.0
CU 1	CONDENSING UNIT: TRANE: TWP036	ON GRADE	COOLING: 34 MBH HEATING: 35 MBH	100.0	96.0	90.0	89.0	86.0	80.0	75.0	72.0	91.0
CU 2	CONDENSING UNIT: TRANE: TWP060	ON GRADE	COOLING: 59 MBH HEATING: 55 MBH	100.0	96.0	90.0	89.0	86.0	80.0	75.0	72.0	91.0
HP 3	HEAT PUMP TRANE: PTHC 12	WALL	COOLING: 11 MBH HEATING: 11 MBH	79	75	69	68	65	59	54	51	70

EXHIBIT 11
MAINTENANCE
POTENTIAL VIOLATION AREAS (1)



SOURCE: Matalon Architecture and Planning, 2002.

**EXHIBIT 12
MAINTENANCE
POTENTIAL VIOLATION AREAS (2)**

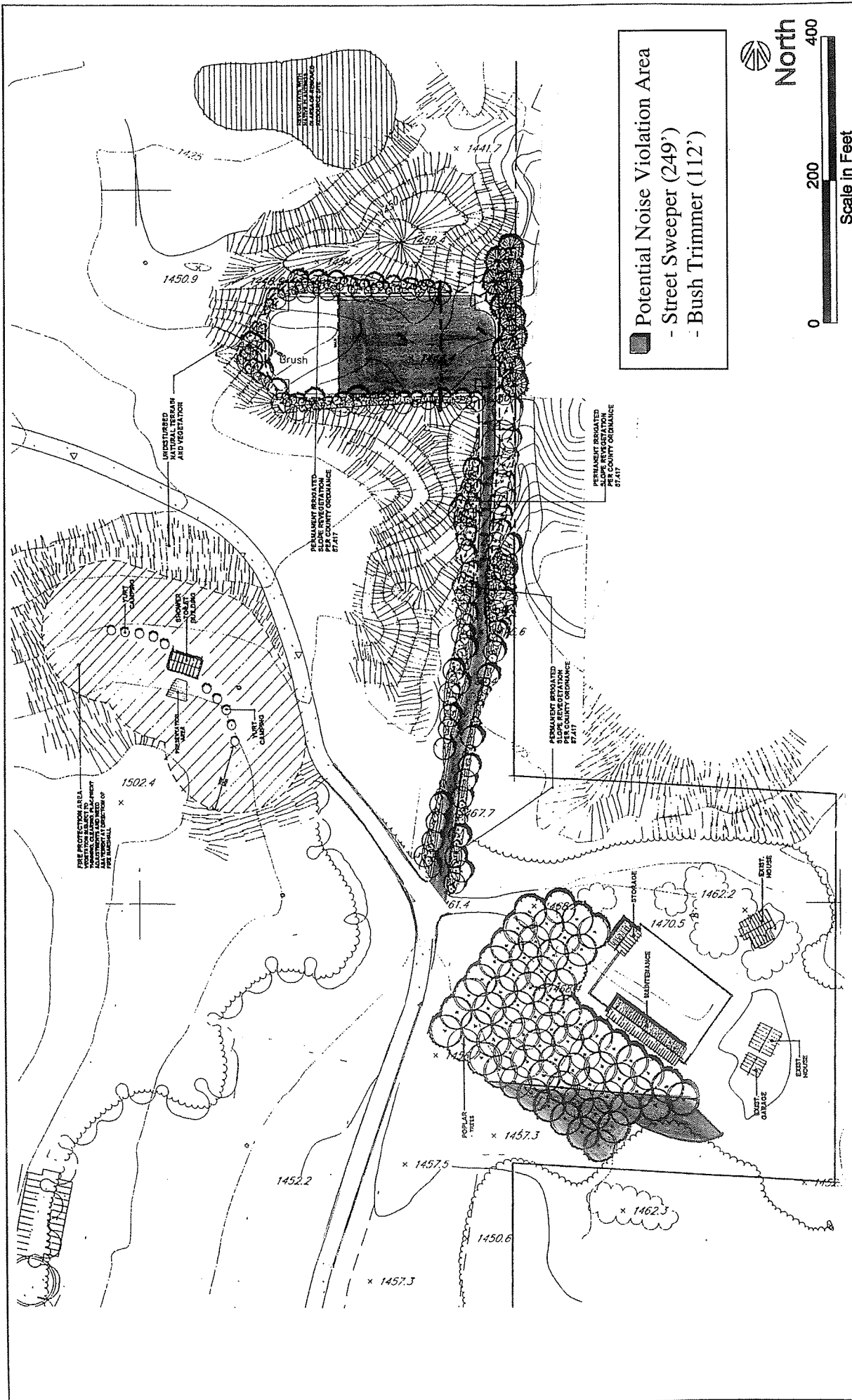


EXHIBIT 13

CONSTRUCTION EQUIPMENT

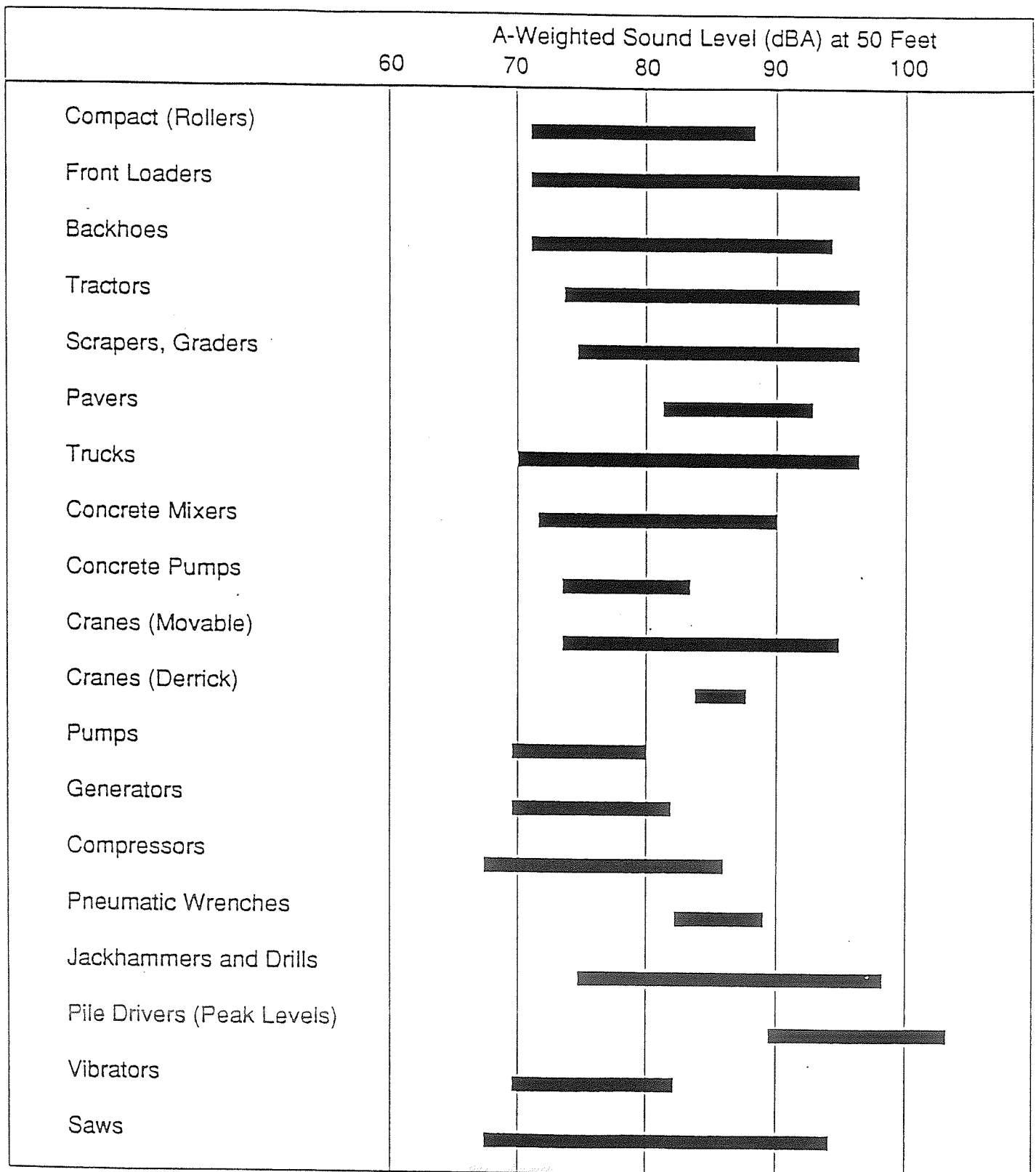


EXHIBIT 14
WILDLIFE AREAS

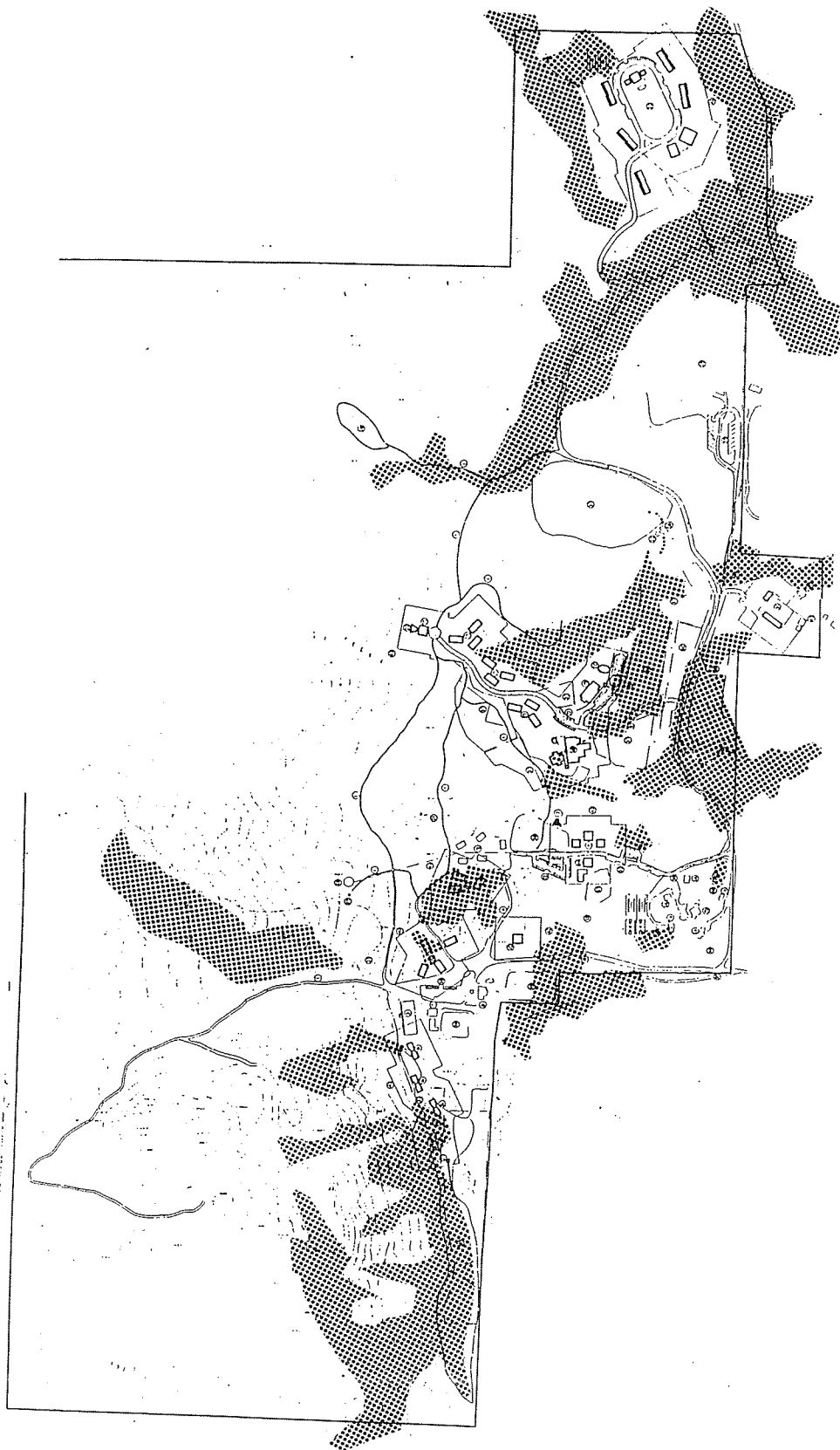


EXHIBIT 15 ALTERNATIVE I

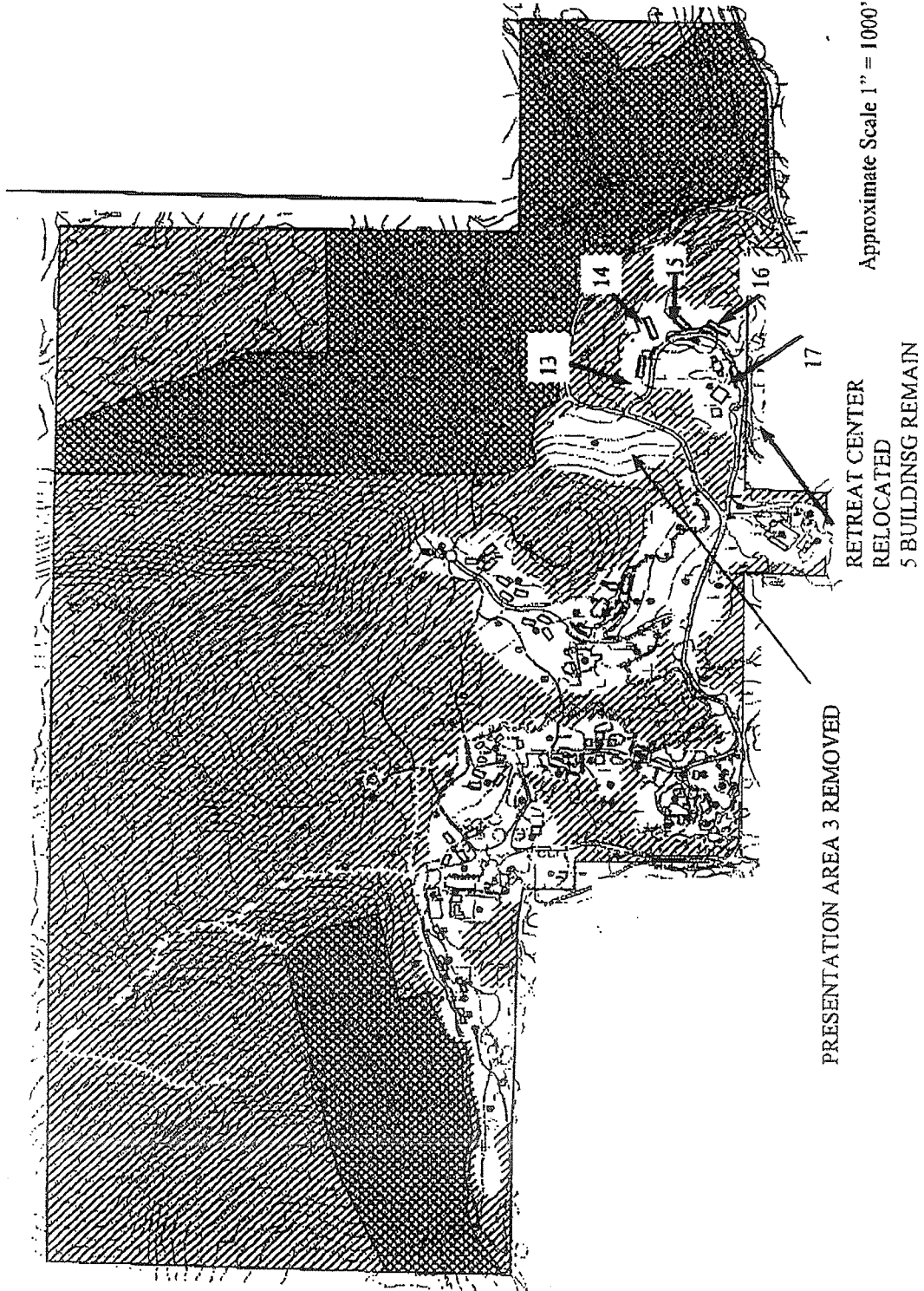
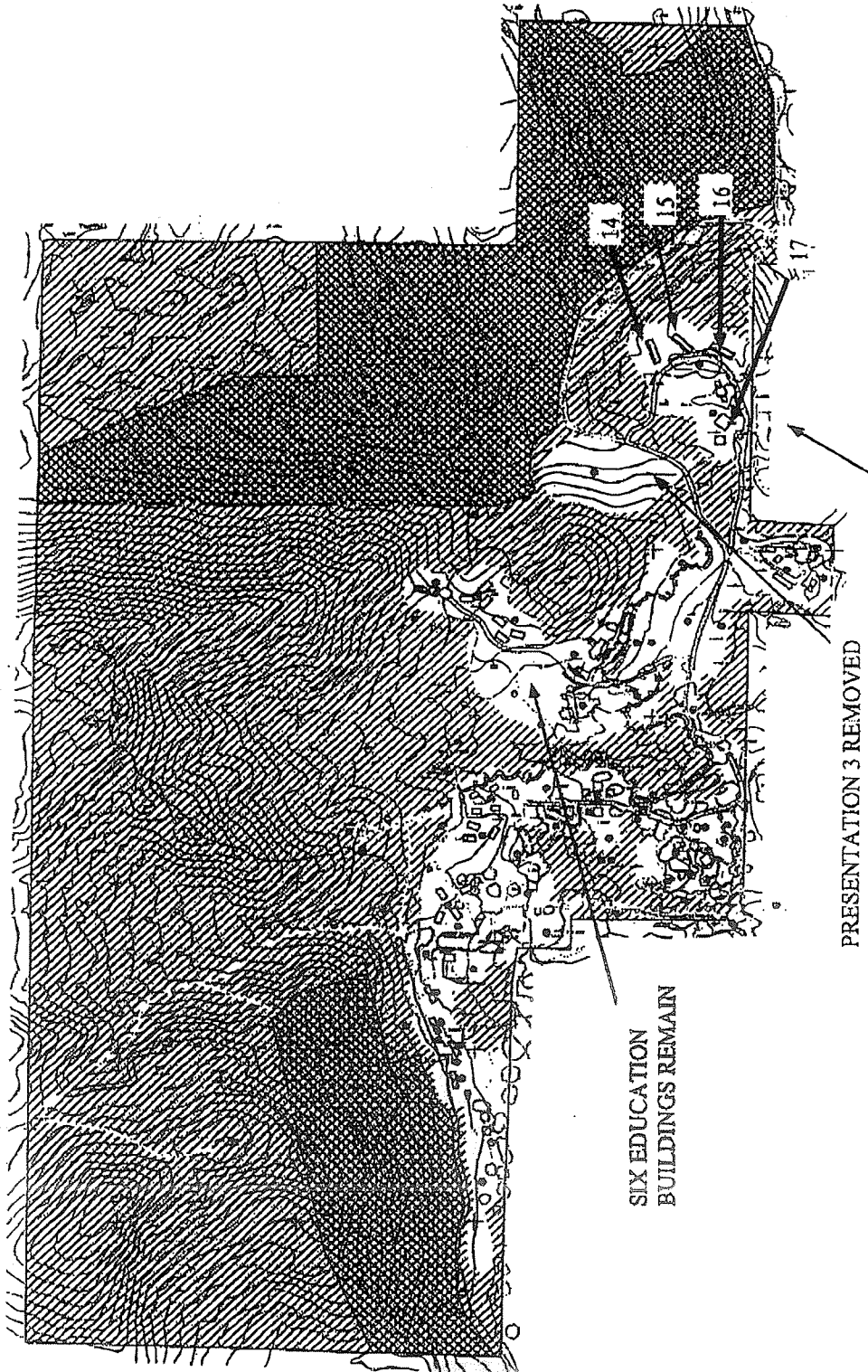


EXHIBIT 16 ALTERNATIVE II

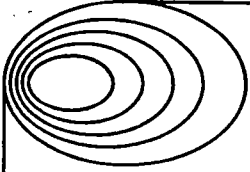


SIX EDUCATION
BUILDINGS REMAIN

PRESENTATION 3 REMOVED

RETREAT CENTER
RELOCATED
4 BUILDINGS
REMAIN

Approximate Scale 1" = 1000'



GORDON BRICKEN & ASSOCIATES

ACOUSTICAL and ENERGY ENGINEERS

A P P E N D I X 1

CALCULATIONS FROM TRAFFIC COUNTS

1621 East Seventeenth Street, Suite K Santa Ana, California 92705-8518
Phone (714) 835-0249 FAX (714) 835-1957

HOURLY NOISE LEVEL

PROJECT : SALVATION ARMY
STREET NAME : MUSSEY GRADE ROAD
SITE TYPE : SOFT

INPUT DATA

	AUTO ----	METK ----	HVTK ----
SPEED:	50	50	50
% VOLUME:	83.3	0	16.7
VOLUME	= 36		
HVY TRK GRADIENT	= 0 DBA		

NOISE LEVEL

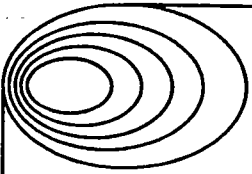
AUTO	53.7
MED. TRK.	0.0
HVY. TRK.	61.0
TOTAL	61.8

NOISE LEVEL AT 75 FT

AUTO ----	MEDIUM TRK -----	HEAVY TRK -----	TOTAL -----
51.1	0.0	58.4	59.1

LEQ AT SPECIFIED DISTANCES

DISTANCE -----	LEQ ----
50	61.8
75	59.1
100	57.3
125	55.8
150	54.6
175	53.6
200	52.7
250	51.3
300	50.1
350	49.1
400	48.2
450	47.5
500	46.8
550	46.2
600	45.6
650	45.1
700	44.6
750	44.1
800	43.7
1000	42.3



GORDON BRICKEN & ASSOCIATES
ACOUSTICAL and ENERGY ENGINEERS

A P P E N D I X 2

24 HOUR PRINTOUT

1621 East Seventeenth Street, Suite K Santa Ana, California 92705-8518
Phone (714) 835-0249 FAX (714) 835-1957

DATA REPORT

03/18/99 16:21:33 LARSON-DAVIS LABS -- MODEL 700
SN 700B0709

PAGE 1

56.8 CNE
@ 100'

Dose 0.1
Proj 0.0
SEL 105.3
LVL 55.8
Time 0024:51:28
Lmin 25.0
Lmax 100.0
Lpk 117.5
OVL 00
RMS Ex 0000
Pk Ex 0000
R/S -01
Memory 5282.0
L02 64.0
L08 57.0
L25 44.0
L50 35.0

SETUP DATA

Detc FAST
Wght A
Pk Unwgt =0

Crit 90.0
Thld 32.0
Exch 3
LDL =0

RMS Thld 115.0
Pk Thld 140.0
Hyst 0

Run date 03/17
Stop date 00/00
Run time 1 13:00
Stop time 1 99:00
Run time 2 99:00
Stop time 2 99:00

Excd =0

Intv =1
Time 01:00
Auto-Stop =0
Ln =1

INTV REPORT

LARSON-DAVIS LABS -- MODEL 700

03/18/99 16:21:44

SN 700B0709

PAGE 2

Cnt	LVL	SEL	Lmax	Lpk	Lmin	Date	Time	Dur	Ex	Pk	Ov
1	55.5	91.0	81.5	94.5	25.0	17 MAR	13:00:01	1:00	h:m	0	0
			L02 = 65.5		L08 = 60.5		L25 = 52.5		L50 = 43.5		
2	64.5	100.0	94.5	107.5	32.0	17 MAR	14:00:01	1:00	h:m	0	0
			L02 = 69.0		L08 = 61.5		L25 = 53.5		L50 = 42.0		
3	55.5	91.0	77.5	90.0	32.0	17 MAR	15:00:01	1:00	h:m	0	0
			L02 = 65.5		L08 = 60.5		L25 = 51.5		L50 = 42.0		
4	55.0	90.5	73.5	93.5	32.0	17 MAR	16:00:01	1:00	h:m	0	0
			L02 = 65.5		L08 = 60.0		L25 = 50.0		L50 = 38.0		
5	56.0	91.5	74.5	91.0	32.0	17 MAR	17:00:01	1:00	h:m	0	0
			L02 = 66.5		L08 = 61.0		L25 = 51.5		L50 = 38.0		
6	56.0	91.5	75.5	92.5	32.0	17 MAR	18:00:01	1:00	h:m	0	0
			L02 = 66.5		L08 = 61.0		L25 = 51.0		L50 = 40.5		
7	53.5	89.0	74.0	93.0	32.0	17 MAR	19:00:01	1:00	h:m	0	0
			L02 = 65.0		L08 = 57.5		L25 = 40.0		L50 = 33.5		
8	51.5	87.5	72.0	95.0	32.0	17 MAR	20:00:01	1:00	h:m	0	0
			L02 = 63.0		L08 = 55.0		L25 = 39.5		L50 = 33.5		
9	50.0	86.0	71.5	90.5	32.0	17 MAR	21:00:01	1:00	h:m	0	0
			L02 = 61.5		L08 = 52.5		L25 = 36.0		L50 = 33.0		
10	48.5	84.5	70.5	83.5	32.5	17 MAR	22:00:01	1:00	h:m	0	0
			L02 = 60.5		L08 = 50.0		L25 = 34.5		L50 = 33.5		
11	42.0	77.5	68.5	85.0	32.5	17 MAR	23:00:01	1:00	h:m	0	0
			L02 = 48.5		L08 = 35.0		L25 = 34.0		L50 = 33.5		
12	48.5	84.0	74.0	90.5	32.5	18 MAR	0:00:01	1:00	h:m	0	0
			L02 = 57.0		L08 = 36.5		L25 = 34.0		L50 = 34.0		
13	45.0	80.5	70.5	85.0	33.0	18 MAR	1:00:01	1:00	h:m	0	0
			L02 = 52.5		L08 = 35.0		L25 = 34.0		L50 = 34.0		
14	40.0	75.5	69.5	80.5	33.0	18 MAR	2:00:01	1:00	h:m	0	0
			L02 = 37.0		L08 = 34.5		L25 = 34.0		L50 = 34.0		
15	39.0	75.0	66.0	83.0	33.0	18 MAR	3:00:01	1:00	h:m	0	0
			L02 = 35.0		L08 = 34.5		L25 = 34.0		L50 = 34.0		
16	46.5	82.5	70.0	85.5	33.0	18 MAR	4:00:01	1:00	h:m	0	0
			L02 = 56.5		L08 = 36.5		L25 = 34.5		L50 = 34.0		
17	50.5	86.0	73.5	92.0	33.0	18 MAR	5:00:01	1:00	h:m	0	0
			L02 = 61.5		L08 = 51.5		L25 = 36.5		L50 = 35.0		
18	54.5	90.0	75.0	91.5	33.5	18 MAR	6:00:01	1:00	h:m	0	0
			L02 = 66.0		L08 = 59.0		L25 = 43.5		L50 = 37.0		
19	56.0	91.5	77.0	92.0	33.5	18 MAR	7:00:01	1:00	h:m	0	0

L02 = 66.5 L08 = 61.0 L25 = 50.5 L50 = 39.0

20 55.5 91.0 75.5 95.5 33.0 18 MAR 8:00:01 1:00 h:m 0 0 0
L02 = 65.5 L08 = 60.5 L25 = 50.0 L50 = 40.0

21 54.0 89.5 76.5 101.5 32.5 18 MAR 9:00:01 1:00 h:m 0 0 0
L02 = 64.5 L08 = 58.5 L25 = 48.0 L50 = 39.5

```

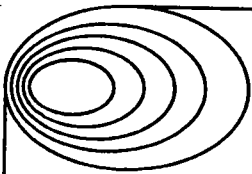
22  53.0  89.0  74.5  93.5  32.5 18 MAR 10:00:01  1:00 h:m  0  0  0
      L02 = 63.5      L08 = 57.0      L25 = 46.0      L50 = 38.0

```

```
23  51.0  86.5  73.0 102.5  32.0 18 MAR  11:00:01  1:00 h:m  0  0  0
      L02 = 61.5      L08 = 55.0      L25 = 45.5      L50 = 38.0
```

24 53.0 88.5 75.5 94.5 32.0 18 MAR 12:00:01 1:00 h:m 0 0 0
L02 = 63.5 L08 = 57.5 L25 = 49.0 L50 = 40.0

56.8 dBA CNEL



GORDON BRICKEN & ASSOCIATES

ACOUSTICAL and ENERGY ENGINEERS

A P P E N D I X 3

TRAFFIC CHARTS

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Phone (714) 835-0249 FAX (714) 835-1957

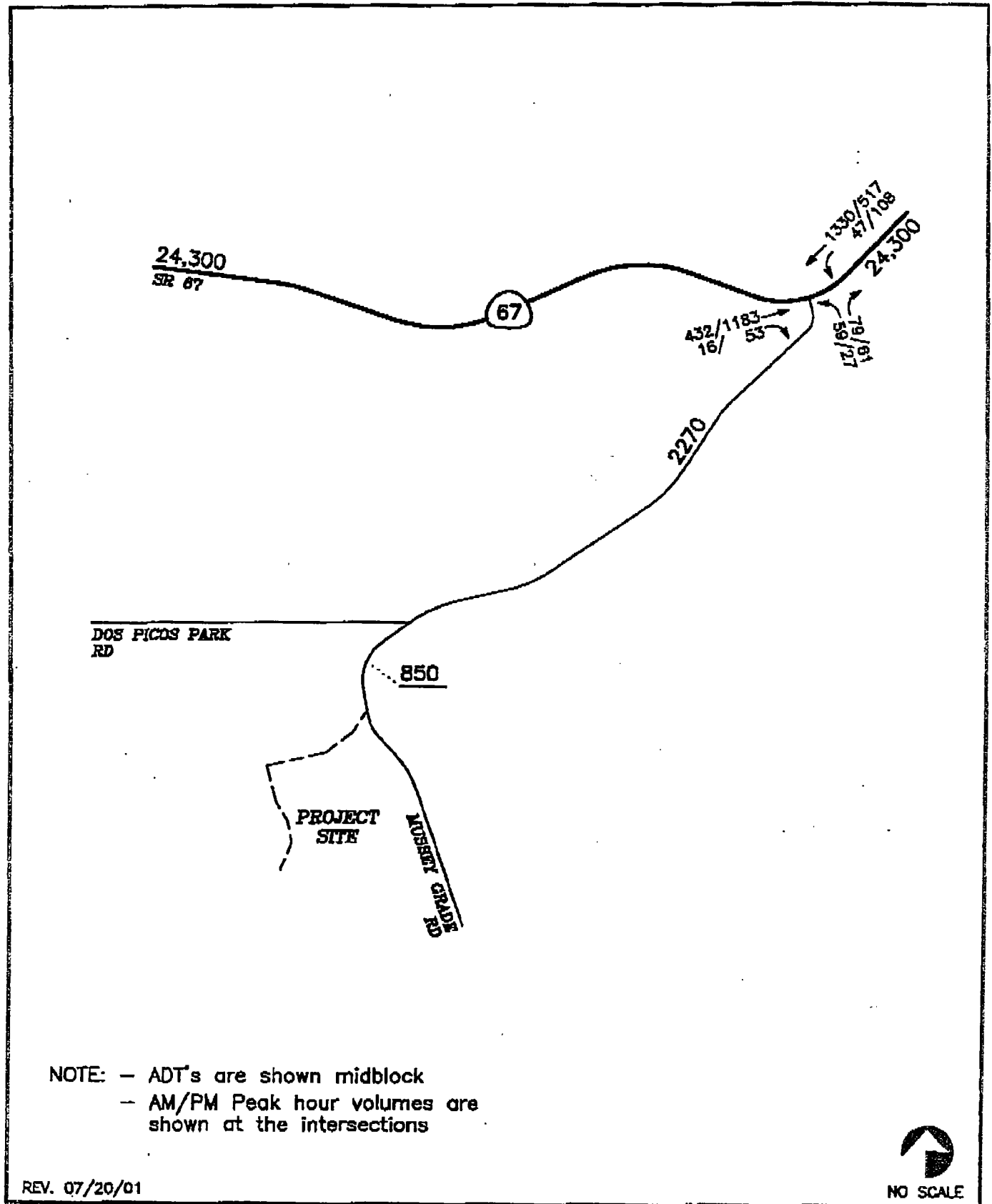


Figure 5

EXISTING TRAFFIC VOLUMES
AM/PM PEAK HOURS & ADT's

SIERRA DEL MAR

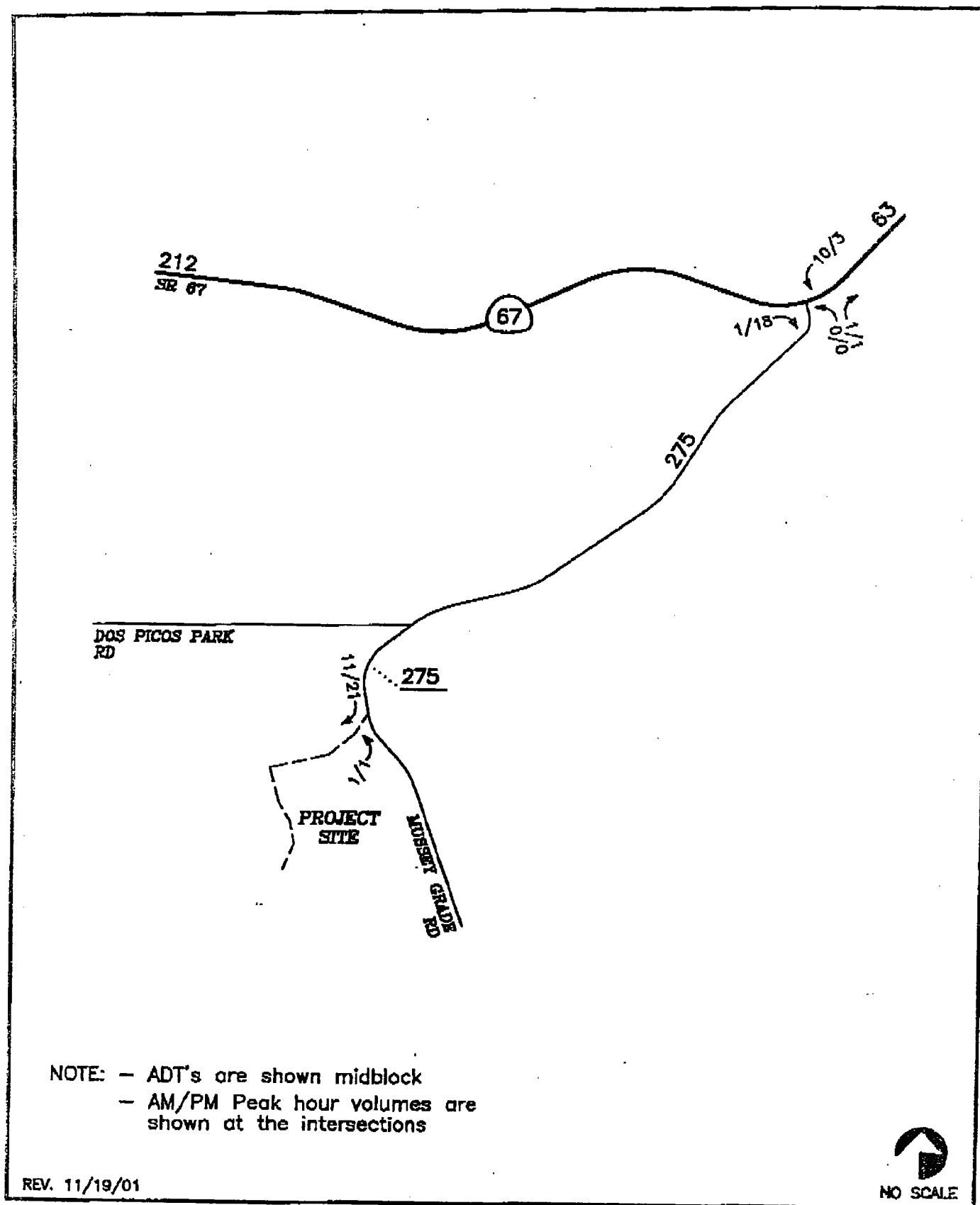


Figure 7

PROJECT TRAFFIC VOLUMES
AM/PM PEAK HOURS & ADT's

SIERRA DEL MAR

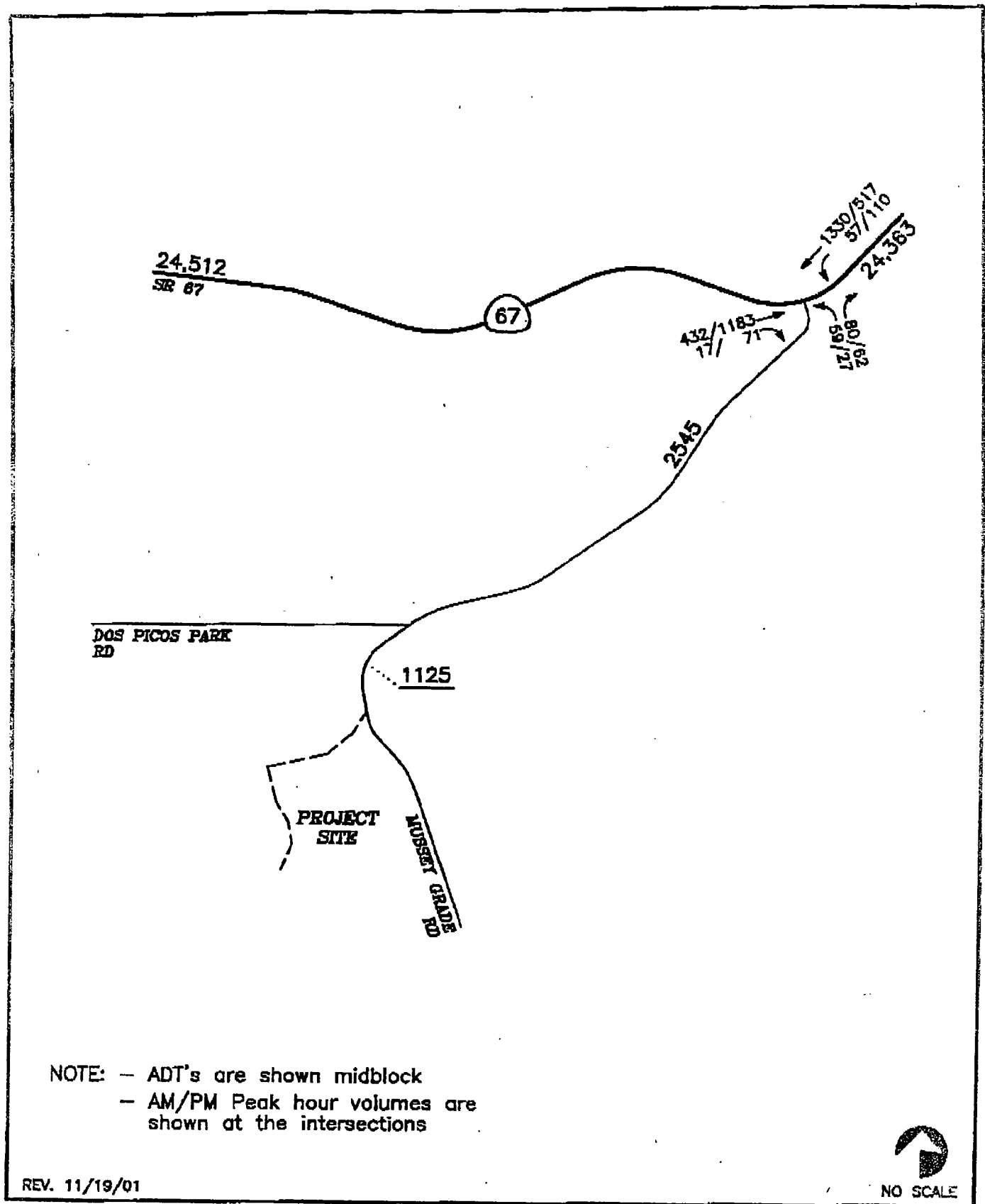


Figure 8

EXISTING + PROJECT TRAFFIC VOLUMES
AM/PM PEAK HOURS & ADT's

-15-

SIERRA DEL MAR

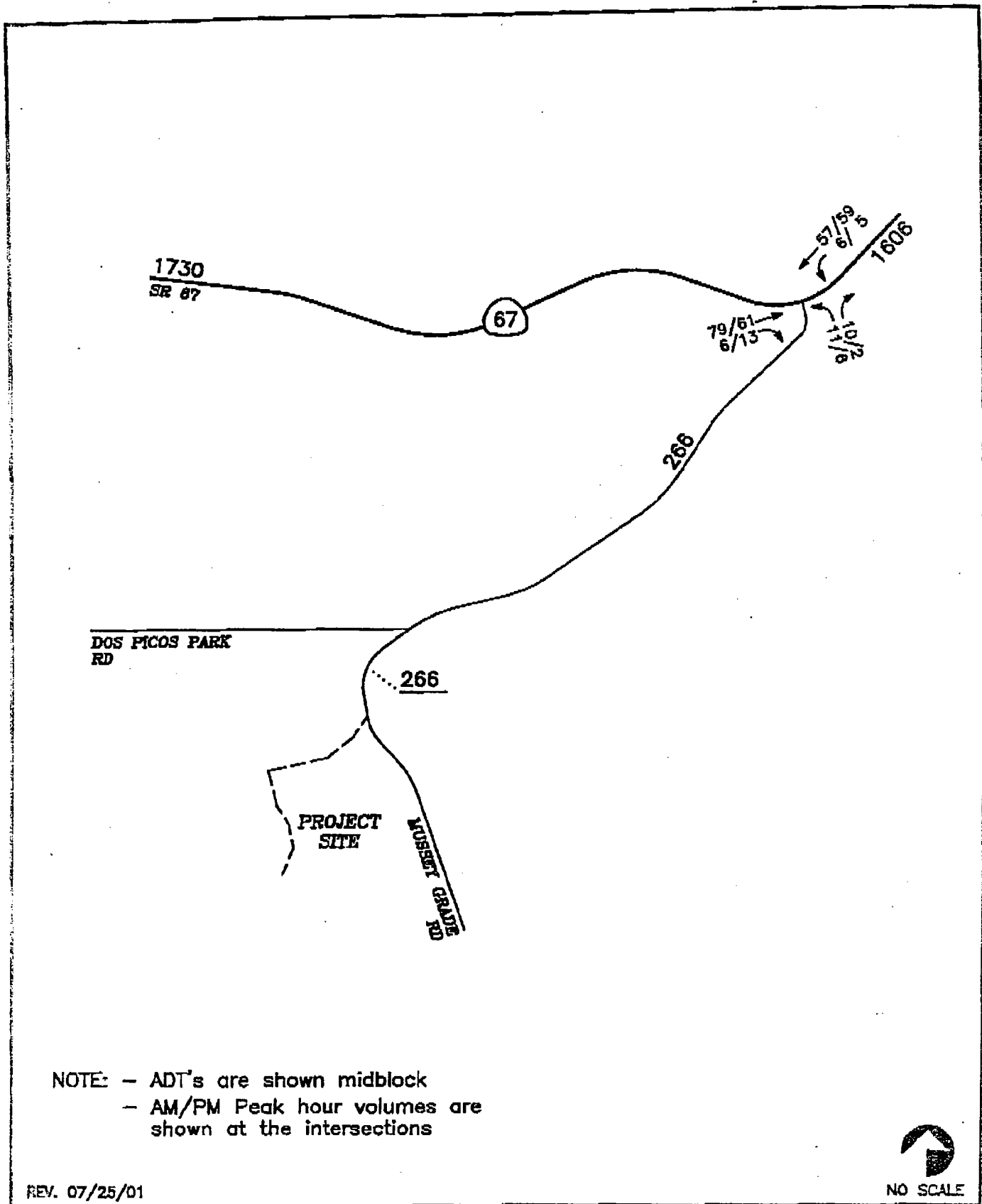


Figure 9

NEAR-TERM CUMULATIVE TRAFFIC VOLUMES
AM/PM PEAK HOURS & ADT's

-18-

SIERRA DEL MAR

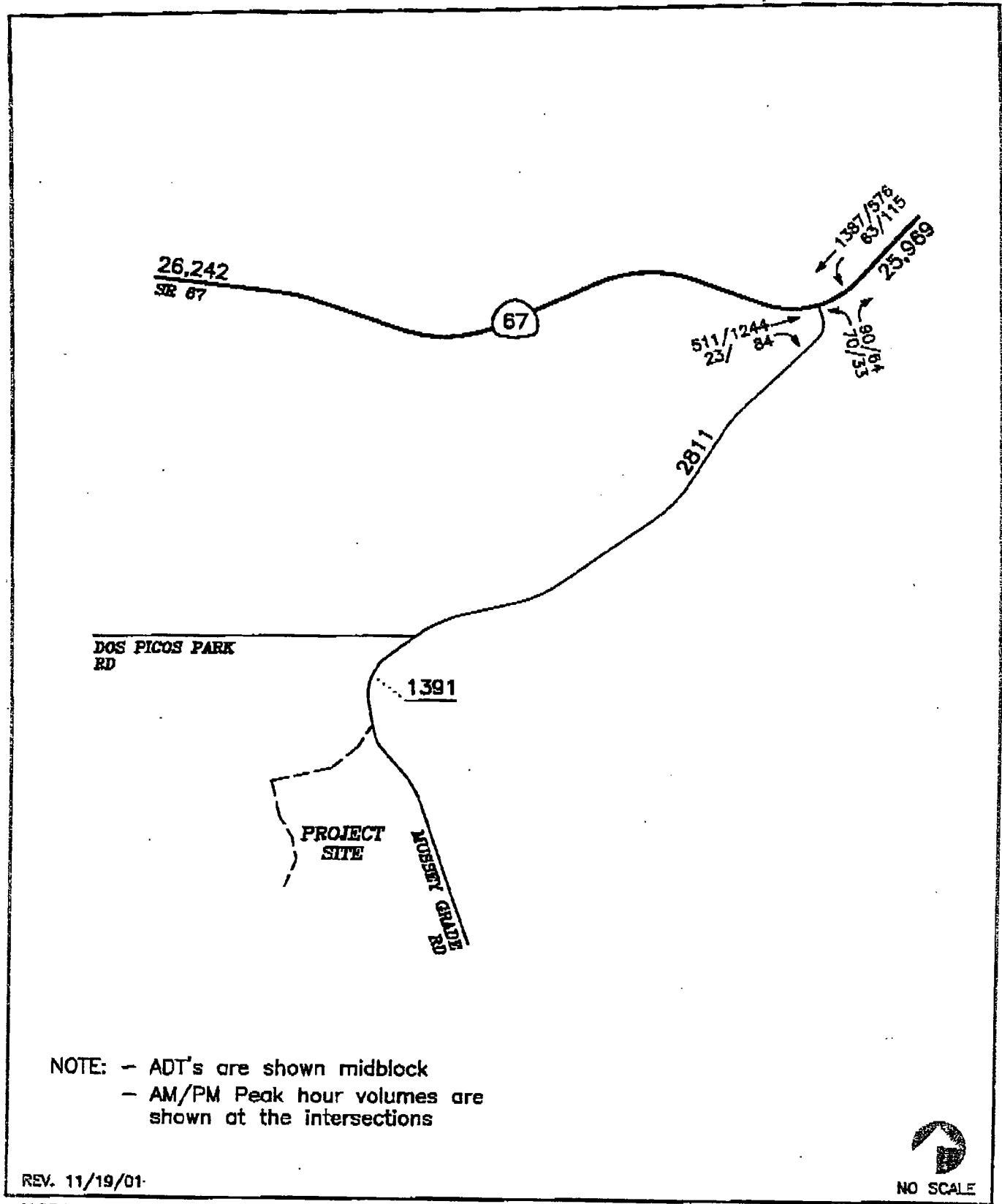
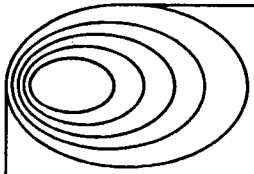


Figure 10

EXISTING + PROJECT + NEAR-TERM CUMULATIVE
TRAFFIC VOLUMES
AM/PM PEAK HOURS & ADT's

-19-

SIERRA DEL MAR



GORDON BRICKEN & ASSOCIATES

ACOUSTICAL and ENERGY ENGINEERS

A P P E N D I X 4

EXISTING TRAFFIC CALCULATIONS

1621 East Seventeenth Street, Suite K Santa Ana, California 92705-8518
Phone (714) 835-0249 FAX (714) 835-1957

FHWA RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT NAME :SALVATION ARMY
SITE LOCATION :SAN DIEGO
DESCRIPTION :SR67 EAST OF MUSSEY GRADE
SITE TYPE :HARD

INPUT DATA AUTO MEDIUM TRUCK HEAVY TRUCK
SPEED 50 50 50
% DAY 75.5 100 100
% EVENING 14.10 0.00 0.00
% NIGHT 10.4 0 0
% VOLUME 98.2 1.6 .2
VOLUME 24300

-----AVERAGE HOURLY NOISE LEVELS AT 50 FEET-----

 DAY EVENING NIGHT 24 HOUR CNEL

AUTO 70.74 69.47 63.38 68.95 72.41
MEDIUM TRK. 64.11 0.00 0.00 61.10 61.10
HEAVY TRK. 59.32 0.00 0.00 56.31 56.31
TOTAL 71.84 69.47 63.38 69.81 72.82

NOISE LEVEL AT SPECIFIED DISTANCES

DISTANCE CNEL

50 72.82
75 71.06
100 69.81
125 68.84
150 68.05
175 67.38
200 66.80
225 66.29
250 65.83
275 65.41
300 65.04
325 64.69
350 64.37
375 64.07
400 63.79
450 63.28
500 62.82
550 62.40
600 62.03
650 61.68
700 61.36
750 61.06
800 60.78

FHWA RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT NAME :SALVATION ARMY
SITE LOCATION :SAN DIEGO
DESCRIPTION :SR67 WEST OF MUSSEY GRADE
SITE TYPE :HARD

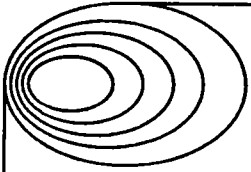
INPUT DATA	AUTO	MEDIUM TRUCK	HEAVY TRUCK
SPEED	50	50	50
% DAY	75.5	100	100
% EVENING	14.10	0.00	0.00
% NIGHT	10.4	0	0
% VOLUME	98.2	1.6	.2
VOLUME	24300		

-----AVERAGE HOURLY NOISE LEVELS AT 50 FEET-----

	DAY	EVENING	NIGHT	24 HOUR	CNEL
AUTO	70.74	69.47	63.38	68.95	72.41
MEDIUM TRK.	64.11	0.00	0.00	61.10	61.10
HEAVY TRK.	59.32	0.00	0.00	56.31	56.31
TOTAL	71.84	69.47	63.38	69.81	72.82

NOISE LEVEL AT SPECIFIED DISTANCES

DISTANCE	CNEL
50	72.82
75	71.06
100	69.81
125	68.84
150	68.05
175	67.38
200	66.80
225	66.29
250	65.83
275	65.41
300	65.04
325	64.69
350	64.37
375	64.07
400	63.79
450	63.28
500	62.82
550	62.40
600	62.03
650	61.68
700	61.36
750	61.06
800	60.78



GORDON BRICKEN & ASSOCIATES
ACOUSTICAL and ENERGY ENGINEERS

A P P E N D I X 5

EXISTING ON-SITE TRAFFIC CALCULATIONS

1621 East Seventeenth Street, Suite K Santa Ana, California 92705-8518
Phone (714) 835-0249 FAX (714) 835-1957

HOURLY NOISE LEVEL

PROJECT : SALVATION ARMY
 STREET NAME : EXISTING INTERNAL ROAD PEAK HOUR
 SITE TYPE : HARD

INPUT DATA

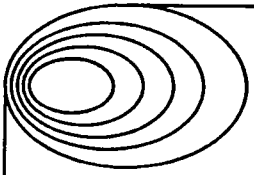
	AUTO	METK	HVTK
	----	----	----
SPEED:	35	35	35
% VOLUME:	100	0	0
VOLUME	= 12		
HVY TRK GRADIENT	= 0 DBA		

NOISE LEVEL

AUTO	45.4
MED. TRK.	0.0
HVY. TRK.	0.0
TOTAL	45.4

LEQ AT SPECIFIED DISTANCES

DISTANCE	LEQ
----	----
50	45.4
75	43.7
100	42.4
125	41.4
150	40.6
175	40.0
200	39.4
250	38.4
300	37.6
350	37.0
400	36.4
450	35.9
500	35.4
550	35.0
600	34.6
650	34.3
700	34.0
750	33.7
800	33.4
1000	32.4



GORDON BRICKEN & ASSOCIATES

ACOUSTICAL and ENERGY ENGINEERS

A P P E N D I X 6

FUTURE TRAFFIC

1621 East Seventeenth Street, Suite K Santa Ana, California 92705-8518
Phone (714) 835-0249 FAX (714) 835-1957

FHWA RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT NAME	:SALVATION ARMY
SITE LOCATION	:SAN DIEGO
DESCRIPTION	:SR67 EXITING + PROJECT E/O MUSSEY GRADE
SITE TYPE	:HARD

INPUT DATA	AUTO	MEDIUM TRUCK	HEAVY TRUCK
SPEED	50	50	50
% DAY	75.5	100	100
% EVENING	14.10	0.00	0.00
% NIGHT	10.4	0	0
% VOLUME	98.2	1.6	.2
VOLUME	24363		

-----AVERAGE HOURLY NOISE LEVELS AT 50 FEET-----

	DAY	EVENING	NIGHT	24 HOUR	CNEL
AUTO	70.75	69.48	63.39	68.96	72.42
MEDIUM TRK.	64.12	0.00	0.00	61.11	61.11
HEAVY TRK.	59.33	0.00	0.00	56.32	56.32
TOTAL	71.86	69.48	63.39	69.82	72.83

NOISE LEVEL AT SPECIFIED DISTANCES

DISTANCE	CNEL
50	72.83
75	71.07
100	69.82
125	68.85
150	68.06
175	67.39
200	66.81
225	66.30
250	65.84
275	65.43
300	65.05
325	64.70
350	64.38
375	64.08
400	63.80
450	63.29
500	62.83
550	62.42
600	62.04
650	61.69
700	61.37
750	61.07
800	60.79

FHWA RD-77-108 HIGHWAY NOISE PREDICTION MODEL

```

-----
PROJECT NAME           :SALVATION ARMY
SITE LOCATION          :SAN DIEGO
DESCRIPTION             :ST57 EXISTING + PROJECT W/O MUSSEY GRADE
SITE TYPE              :HARD
-----

```

```

-----
INPUT DATA    AUTO          MEDIUM TRUCK  HEAVY TRUCK
SPEED          50            50            50
% DAY          75.5          100           100
% EVENING      14.10         0.00          0.00
% NIGHT        10.4          0             0
% VOLUME       98.2          1.6            .2
VOLUME         24512
-----

```

```

-----
          ----AVERAGE HOURLY NOISE LEVELS AT 50 FEET----
          DAY          EVENING          NIGHT          24 HOUR          CNEL
-----
AUTO      70.78        69.51          63.42          68.99          72.45
MEDIUM TRK. 64.15        0.00          0.00          61.14          61.14
HEAVY TRK.  59.36        0.00          0.00          56.35          56.35
TOTAL      71.88        69.51          63.42          69.85          72.86
-----

```

NOISE LEVEL AT SPECIFIED DISTANCES

```

-----
DISTANCE      CNEL
-----
50            72.86
75            71.09
100           69.85
125           68.88
150           68.08
175           67.41
200           66.84
225           66.32
250           65.87
275           65.45
300           65.07
325           64.73
350           64.40
375           64.11
400           63.82
450           63.31
500           62.86
550           62.44
600           62.06
650           61.72
700           61.39
750           61.09
800           60.81

```

FHWA RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT NAME :SALVATION ARMY
SITE LOCATION :SAN DIEGO
DESCRIPTION :MUSSEY GRADE EXISTING + PROJECT SR67 TO DOS PICOS
SITE TYPE :HARD

INPUT DATA	AUTO	MEDIUM TRUCK	HEAVY TRUCK
SPEED	50	50	50
% DAY	75.5	100	100
% EVENING	14.10	0.00	0.00
% NIGHT	10.4	0	0
% VOLUME	98.2	1.6	.2
VOLUME	2545		

-----AVERAGE HOURLY NOISE LEVELS AT 50 FEET-----

	DAY	EVENING	NIGHT	24 HOUR	CNEL
AUTO	60.94	59.67	53.58	59.15	62.61
MEDIUM TRK.	54.31	0.00	0.00	51.30	51.30
HEAVY TRK.	49.52	0.00	0.00	46.51	46.51
TOTAL	62.04	59.67	53.58	60.01	63.02

NOISE LEVEL AT SPECIFIED DISTANCES

DISTANCE	CNEL
50	63.02
75	61.26
100	60.01
125	59.04
150	58.25
175	57.58
200	57.00
225	56.49
250	56.03
275	55.62
300	55.24
325	54.89
350	54.57
375	54.27
400	53.99
450	53.48
500	53.02
550	52.60
600	52.23
650	51.88
700	51.56
750	51.26
800	50.98

FHWA RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT NAME :SALVATION ARMY
SITE LOCATION :SAN DIEGO
DESCRIPTION :MUSSEY GRADE EXITSING + PROJECT S/O DOS PICOS
SITE TYPE :HARD

INPUT DATA	AUTO	MEDIUM TRUCK	HEAVY TRUCK
SPEED	50	50	50
% DAY	75.5	100	100
% EVENING	14.10	0.00	0.00
% NIGHT	10.4	0	0
% VOLUME	98.2	1.6	.2
VOLUME	1125		

-----AVERAGE HOURLY NOISE LEVELS AT 50 FEET-----

	DAY	EVENING	NIGHT	24 HOUR	CNEL
AUTO	57.40	56.13	50.04	55.61	59.07
MEDIUM TRK.	50.77	0.00	0.00	47.76	47.76
HEAVY TRK.	45.97	0.00	0.00	42.96	42.96
TOTAL	58.50	56.13	50.04	56.46	59.47

NOISE LEVEL AT SPECIFIED DISTANCES

DISTANCE	CNEL
50	59.47
75	57.71
100	56.46
125	55.49
150	54.70
175	54.03
200	53.45
225	52.94
250	52.48
275	52.07
300	51.69
325	51.34
350	51.02
375	50.72
400	50.44
450	49.93
500	49.47
550	49.06
600	48.68
650	48.33
700	48.01
750	47.71
800	47.43

FHWA RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT NAME :SALVATION ARMY
SITE LOCATION :SAN DIEGO
DESCRIPTION :SR67 EXISTING + PROJECT + CUM E/O MUSSEY GRADE
SITE TYPE :HARD

INPUT DATA AUTO MEDIUM TRUCK HEAVY TRUCK
SPEED 50 50 50
% DAY 75.5 100 100
% EVENING 14.10 0.00 0.00
% NIGHT 10.4 0 0
% VOLUME 98.2 1.6 .2
VOLUME 25969

-----AVERAGE HOURLY NOISE LEVELS AT 50 FEET-----

	DAY	EVENING	NIGHT	24 HOUR	CNEL
AUTO	71.03	69.76	63.67	69.24	72.70
MEDIUM TRK.	64.40	0.00	0.00	61.39	61.39
HEAVY TRK.	59.61	0.00	0.00	56.60	56.60
TOTAL	72.13	69.76	63.67	70.10	73.11

NOISE LEVEL AT SPECIFIED DISTANCES

DISTANCE	CNEL
50	73.11
75	71.35
100	70.10
125	69.13
150	68.34
175	67.67
200	67.09
225	66.57
250	66.12
275	65.70
300	65.32
325	64.98
350	64.66
375	64.36
400	64.08
450	63.56
500	63.11
550	62.69
600	62.31
650	61.97
700	61.65
750	61.35
800	61.07

FHWA RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT NAME :SALVATION ARMY
SITE LOCATION :SAN DIEGO
DESCRIPTION :SR67 EXISTING+PROJECT+CUM W/O MUSSEY GRADE
SITE TYPE :HARD

INPUT DATA	AUTO	MEDIUM TRUCK	HEAVY TRUCK
SPEED	50	50	50
% DAY	75.5	100	100
% EVENING	14.10	0.00	0.00
% NIGHT	10.4	0	0
% VOLUME	98.2	1.6	.2
VOLUME	26242		

-----AVERAGE HOURLY NOISE LEVELS AT 50 FEET-----

	DAY	EVENING	NIGHT	24 HOUR	CNEL
AUTO	71.07	69.81	63.71	69.28	72.74
MEDIUM TRK.	64.45	0.00	0.00	61.44	61.44
HEAVY TRK.	59.65	0.00	0.00	56.64	56.64
TOTAL	72.18	69.81	63.71	70.14	73.15

NOISE LEVEL AT SPECIFIED DISTANCES

DISTANCE	CNEL
50	73.15
75	71.39
100	70.14
125	69.17
150	68.38
175	67.71
200	67.13
225	66.62
250	66.16
275	65.75
300	65.37
325	65.02
350	64.70
375	64.40
400	64.12
450	63.61
500	63.15
550	62.74
600	62.36
650	62.01
700	61.69
750	61.39
800	61.11

FHWA RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT NAME : SALVATION ARMY
SITE LOCATION : SAN DIEGO
DESCRIPTION : MUSSEY GRADE EXISTING+PROJECT+CUM SR67 TO DOS PICOS
SITE TYPE : HARD

INPUT DATA	AUTO	MEDIUM TRUCK	HEAVY TRUCK
SPEED	50	50	50
% DAY	75.5	100	100
% EVENING	14.10	0.00	0.00
% NIGHT	10.4	0	0
% VOLUME	98.2	1.6	.2
VOLUME	2811		

-----AVERAGE HOURLY NOISE LEVELS AT 50 FEET-----

	DAY	EVENING	NIGHT	24 HOUR	CNEL
AUTO	61.37	60.11	54.01	59.58	63.04
MEDIUM TRK.	54.75	0.00	0.00	51.74	51.74
HEAVY TRK.	49.95	0.00	0.00	46.94	46.94
TOTAL	62.48	60.11	54.01	60.44	63.45

NOISE LEVEL AT SPECIFIED DISTANCES

DISTANCE	CNEL
50	63.45
75	61.69
100	60.44
125	59.47
150	58.68
175	58.01
200	57.43
225	56.92
250	56.46
275	56.05
300	55.67
325	55.32
350	55.00
375	54.70
400	54.42
450	53.91
500	53.45
550	53.04
600	52.66
650	52.31
700	51.99
750	51.69
800	51.41

FHWA RD-77-108 HIGHWAY NOISE PREDICTION MODEL

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-----
PROJECT NAME           :SALVATION ARMY
SITE LOCATION          :SAN DIEGO
DESCRIPTION             :MUSSEY GRADE EXISTING+PROJECT+CUM S/O DOS PICOS
SITE TYPE              :HARD
-----

```

```

-----
INPUT DATA    AUTO          MEDIUM TRUCK  HEAVY TRUCK
SPEED          50            50             50
% DAY          75.5          100            100
% EVENING      14.10         0.00            0.00
% NIGHT        10.4          0              0
% VOLUME       98.2          1.6             .2
VOLUME         1391
-----

```

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-----
      ----AVERAGE HOURLY NOISE LEVELS AT 50 FEET----

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      DAY          EVENING          NIGHT          24 HOUR          CNEL
-----
AUTO             58.32            57.05            50.96            56.53            59.99
MEDIUM TRK.     51.69            0.00            0.00            48.68            48.68
HEAVY TRK.      46.90            0.00            0.00            43.89            43.89
TOTAL           59.42            57.05            50.96            57.39            60.40
-----

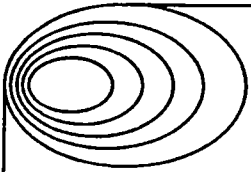
```

NOISE LEVEL AT SPECIFIED DISTANCES

```

DISTANCE      CNEL
-----
50            60.40
75            58.63
100           57.38
125           56.42
150           55.62
175           54.95
200           54.37
225           53.86
250           53.41
275           52.99
300           52.61
325           52.27
350           51.94
375           51.64
400           51.36
450           50.85
500           50.40
550           49.98
600           49.60
650           49.26
700           48.93
750           48.63
800           48.35

```



GORDON BRICKEN & ASSOCIATES

ACOUSTICAL and ENERGY ENGINEERS

A P P E N D I X 7

ON-SITE TRAFFIC CALCULATIONS

1621 East Seventeenth Street, Suite K Santa Ana, California 92705-8518
Phone (714) 835-0249 FAX (714) 835-1957

HOURLY NOISE LEVEL

PROJECT : SALVATION ARMY
 STREET NAME : PROJECT INTERNAL ROAD PEAK HOUR
 SITE TYPE : HARD

INPUT DATA

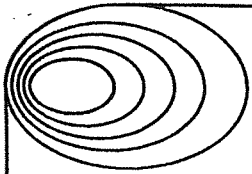
	AUTO ----	METK ----	HVTK ----
SPEED:	35	35	35
% VOLUME:	100	0	0
VOLUME	= 21		
HVY TRK GRADIENT	= 0 DBA		

NOISE LEVEL

AUTO	47.8
MED.TRK.	0.0
HVY.TRK.	0.0
TOTAL	47.8

LEQ AT SPECIFIED DISTANCES

DISTANCE -----	LEQ ---
50	47.8
75	46.1
100	44.8
125	43.9
150	43.1
175	42.4
200	41.8
250	40.9
300	40.1
350	39.4
400	38.8
450	38.3
500	37.8
550	37.4
600	37.1
650	36.7
700	36.4
750	36.1
800	35.8
1000	34.8



GORDON BRICKEN & ASSOCIATES

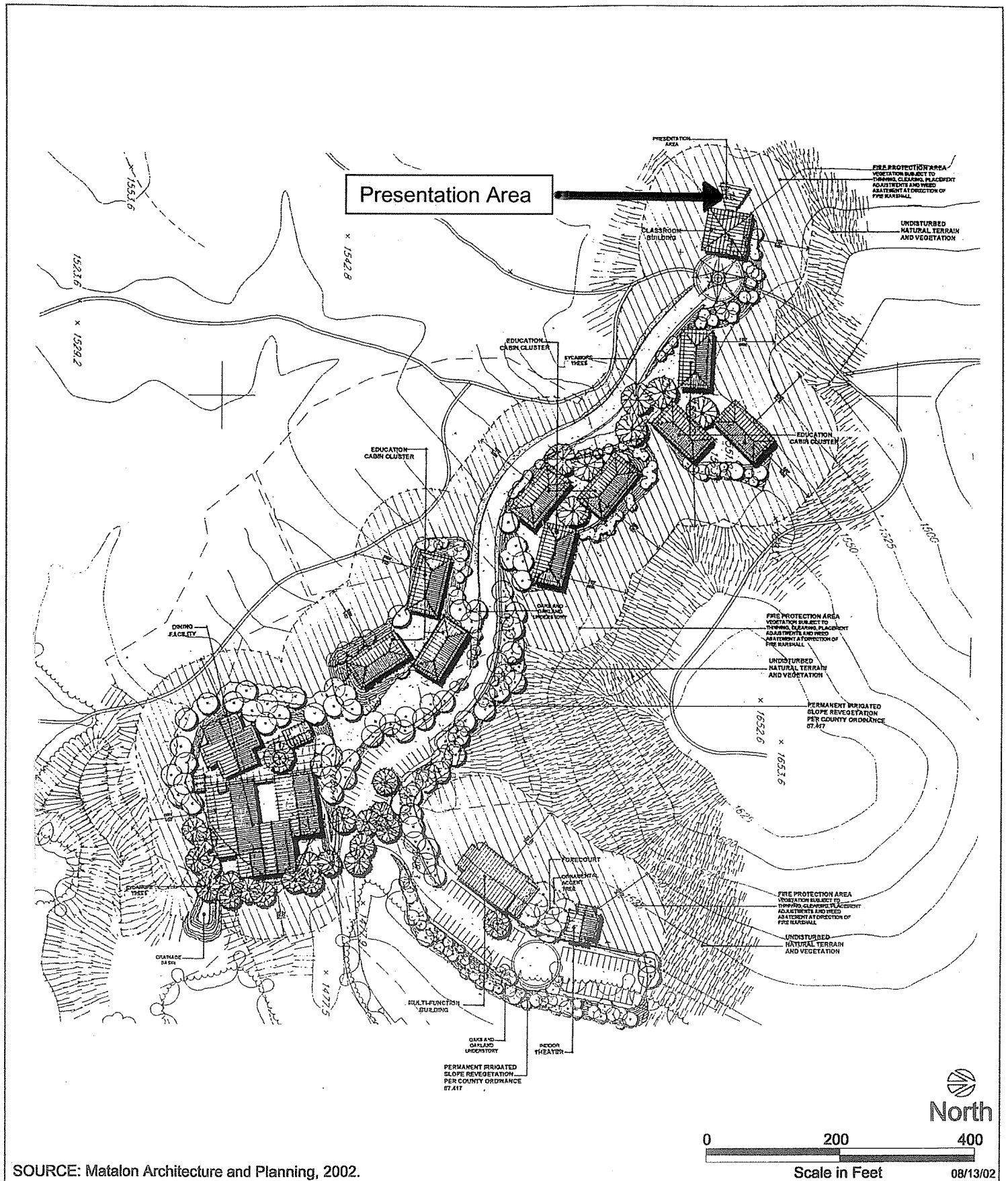
ACOUSTICAL and ENERGY ENGINEERS

Appendix 8

PRESENTATION AREA DETAILS

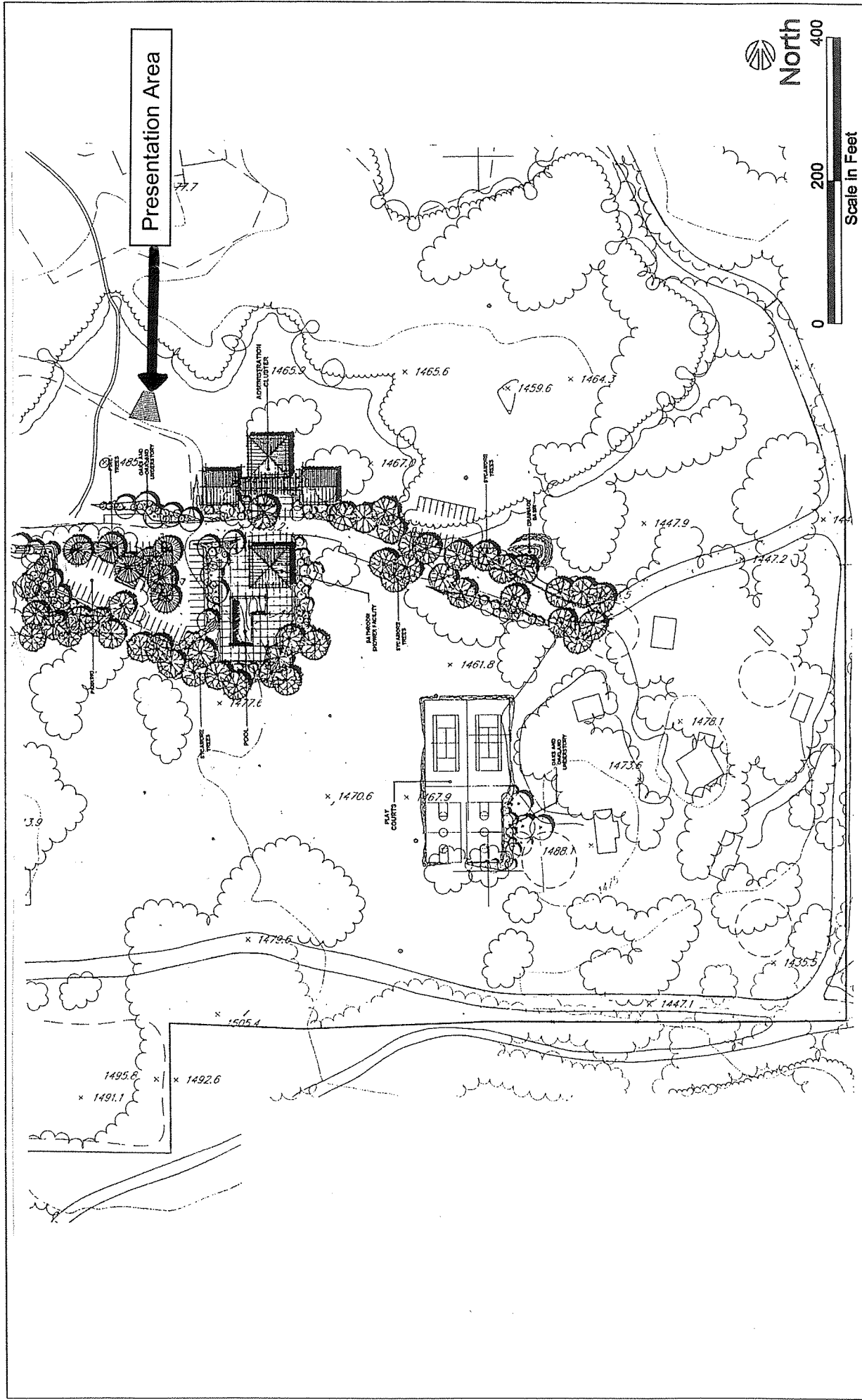
1621 East Seventeenth Street, Suite K Santa Ana, California 92705-8518
Phone (714) 835-0249 FAX (714) 835-1957

Presentation Areas in Planning Area Three



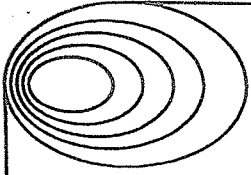
SOURCE: Matalon Architecture and Planning, 2002.

Presentation Areas in Planning Area Four



[illegible]

08/13/02



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ACOUSTICAL and ENERGY ENGINEERS

Appendix 9

Inserts for Salvation Army Procedures Manual

1621 East Seventeenth Street, Suite K Santa Ana, California 92705-8518
Phone (714) 835-0249 FAX (714) 835-1957

SPECIAL NOTICE

Procedures for Maintenance Next to Property Line

Due to the Camp's close proximity to adjacent private property, special care must be taken in certain areas to reduce the noise from the power tools and machines (i.e., street sweepers, motorized bush trimmers, leaf blowers, mowers, etc.) while performing landscaping activities. The following signs shall be installed around the perimeter of the noise sensitive areas at the locations indicated on the maps in this document.

Example Signs

***NOISE SENSITIVE AREA*
NO POWER TOOLS
OR MACHINES
MAY BE OPERATED
BEYOND THIS POINT**

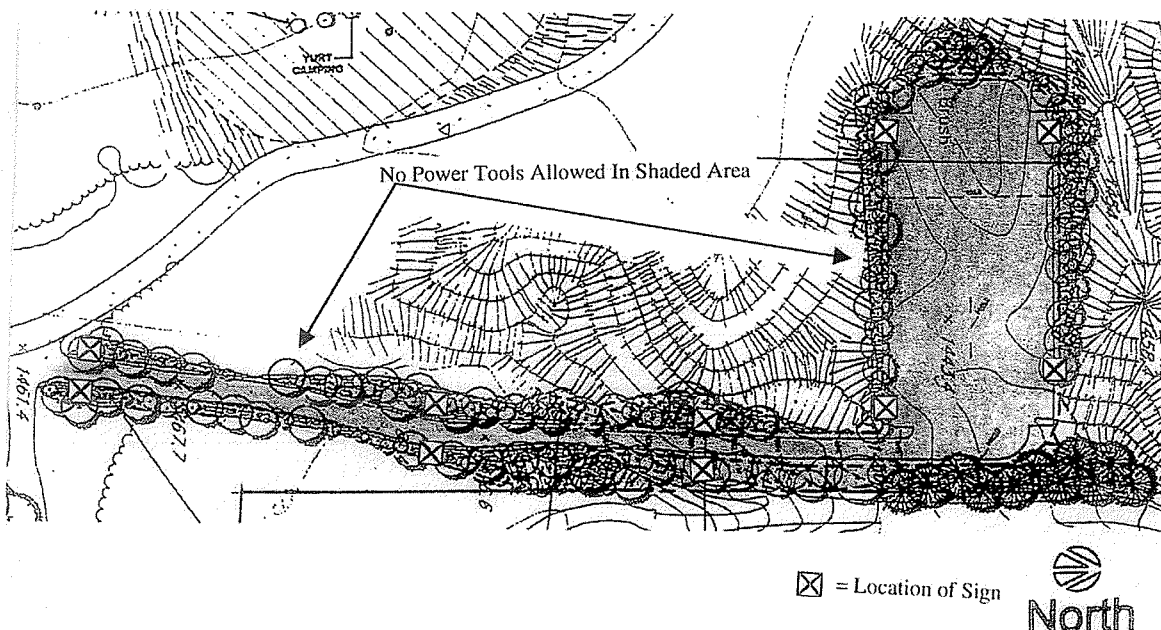
***NOISE SENSITIVE AREA*
NO STREET SWEEPING
ALLOWED BEYOND
THIS POINT**

NOISE SENSITIVE AREAS

- Overflow Parking Lot and Access Street

The Overflow Parking Lot and the street used to access the lot are also located within a close distance to the property line where noise from power tools and a street sweeper could violate the County Noise Ordinance (Refer to the following map for exact area and location of signs). All maintenance work performed along this street and parking lot must be done with non-motorized tools. No street sweeping shall be executed in this area.

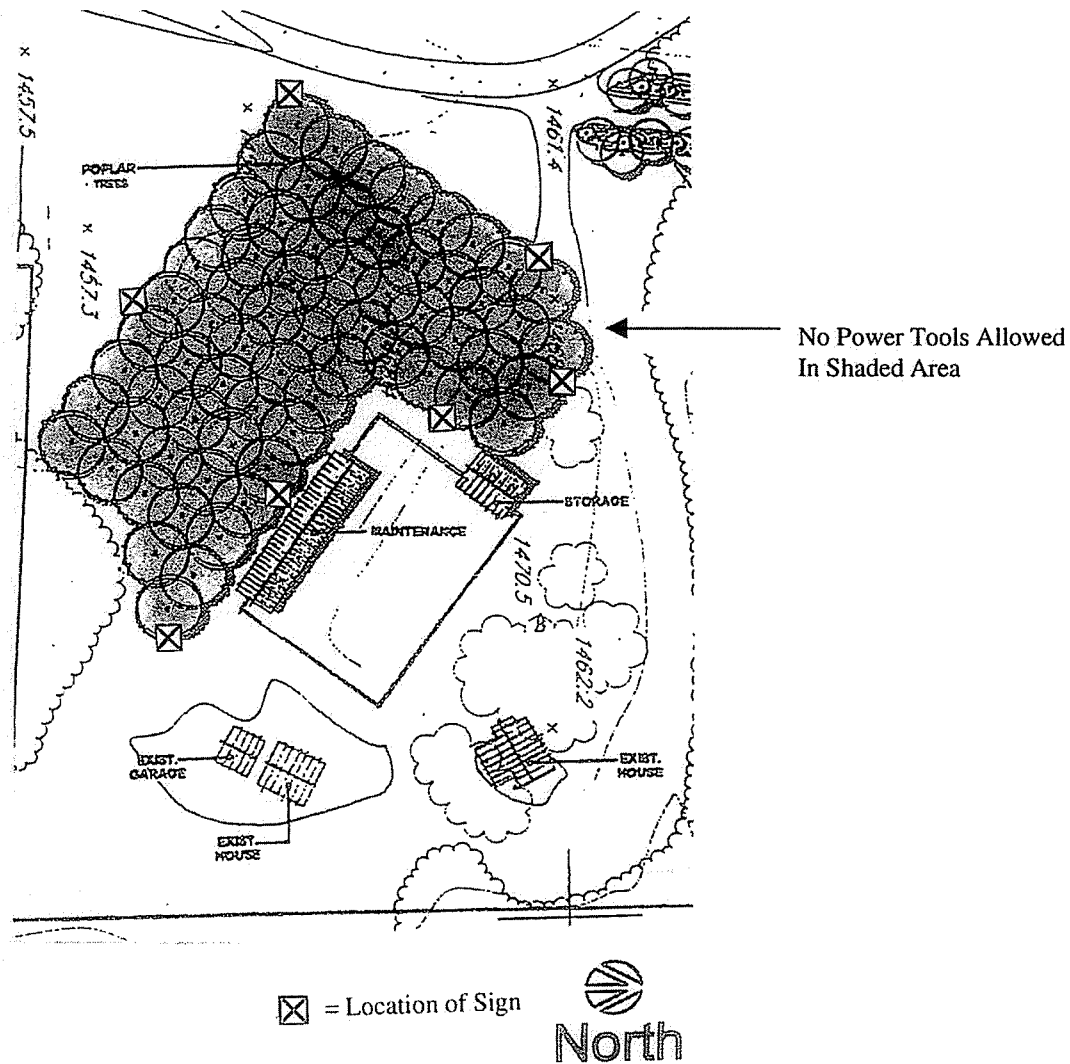
OVERFLOW PARKING LOT



- Maintenance Building

The trees and vegetation surrounding the Maintenance Building are in close proximity to the property line. Noise from power tools in this area could violate the County Noise Ordinance. No power tools are allowed to be used on the Poplar trees or other vegetation in this area. Refer to the following map for specific areas and location of signs.

MAINTENANCE BUILDING



- Retreat Center – Northwest Building

The building to the northwest of the Activity Building is located close to the property line where motorized landscaping equipment could violate the San Diego County Noise Ordinance. No power tools will be permitted in the area from approximately the edge of the parking spaces adjacent to Retreat's Northwest Building, east to the property line and north to the property line (See map for specific area). The appropriate signage shall be installed and mounted at the approximate locations indicated on the map by a (X).

RETREAT CENTER AREA

